

EDUCATOR RETENTION AND TURNOVER UNDER THE MIDNIGHT SUN

Examining trends and relationships in
teacher, principal, and superintendent
movement in Alaska

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Manuel Vazquez Cano, Hella Bel Hadj Amor, and Ashley Pierson
Regional Educational Laboratory Northwest



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About REL Northwest

Regional Educational Laboratory (REL) Northwest, operated by Education Northwest, partners with practitioners and policymakers to strengthen data and evidence use. As one of 10 federally funded regional educational laboratories, we conduct research studies, provide training and technical assistance, and disseminate research findings. Our work focuses on regional challenges such as turning around low-performing schools, improving college and career readiness, and promoting equitable and excellent outcomes for all students. For more information, please go to <https://ies.ed.gov/ncee/edlabs/regions/northwest/>

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Executive summary

This study examines trends in educator turnover and retention, and the relationships of those trends to educator and school characteristics, during a six-year period (2012/13 to 2017/18, with 2011/12 as the base year) in Alaska. Turnover refers to educators leaving their positions, while retention refers to educators staying in their positions at schools and districts. The study also summarizes the retention strategies used by eight school districts from across the state.

Regional Educational Laboratory (REL) Northwest conducted this study in response to a request from a group of school superintendents who are members of the Alaska State Policy Research Alliance, a REL Northwest partnership. The alliance brings together policymakers and education stakeholders, including the Alaska Department of Education and Early Development, the Alaska Superintendents Association, and the University of Alaska, to use research and evidence to inform state and local education policy.

These stakeholders were seeking a more in-depth understanding of educator turnover and retention patterns in Alaska to inform the development and prioritization of recruitment and retention strategies by state and district policymakers.

To address the stakeholders' request, the study team explored the following research questions:

1. What were the teacher, principal, and superintendent (educator) turnover rates by year in Alaska during the 2012/13 to 2017/18 school years?
2. What community, school, educator, and student characteristics are associated with educator turnover?
3. What is the relationship between superintendent and principal turnover and teacher turnover?

Key findings

- From 2012/13 to 2017/18, statewide turnover rates for teachers remained steady at around 22 percent. Rates for principals varied from 23 to 33 percent. Rates for superintendents fluctuated from 19 to 40 percent. Most of the teachers, principals, and superintendents who turned over were leavers, meaning they left the state or remained in the state but were no longer educators.
- Turnover rates were higher in rural areas than in urban areas, with the highest rates in more remote schools.
- Many teachers who changed districts moved from one rural school to another rural school.

- Teachers and principals who were prepared outside Alaska and teachers who were in their first year in either their school or the Alaska K–12 school system were more likely to turn over the following year.
- Lower salaries, holding more than one position, and teaching at more than one school site were related to increased teacher turnover.
- High-poverty, high-diversity, and smaller schools were more likely to experience teacher turnover.
- Principal and teacher turnover were linked: Schools that experienced principal turnover also had high teacher turnover. We found no evidence that superintendent turnover was related to teacher or principal turnover.

Implications

This study suggests that state and local policymakers may want to consider increasing the supply of Alaska-educated teachers; improving teacher working conditions, especially in rural schools; and equipping principals to better support teachers and leverage their input to improve educator retention. The implications of this study may also apply to rural districts and other communities that have many non-local educators.

Contents

Executive summary	i
Educator retention and turnover in Alaska	1
What this study examined	4
Findings	9
Implications	25
References	29
Appendix A: Data and methods	35
Appendix B: Additional results	46
Appendix C: Regression results	68
Appendix D: Interview findings	71

Figures

Figure 1. Regions of Alaska, school urbanicity, and school locale type within the state, 2017/18	7
Figure 2. The percentage of teachers who did not return to their school or role has been steady over time, 2012/13 to 2017/18	9
Figure 3. The percentage of principals who did not return to their school or role varied over time, 2012/13 to 2017/18	11
Figure 4. The percentage of superintendents who did not return to their district or role has varied over time, 2013/14 to 2017/18	12
Figure 5. A higher percentage of teachers and principals in rural-remote and rural-hub/fringe schools, compared to urban and urban-fringe schools, did not return to their school or role	13
Figure 6. Most teachers from rural-remote and rural-hub/fringe schools who moved across districts moved to another rural district	14
Figure 7. A higher percentage of educators who were in their first year in Alaska or their first year at a school did not return to the same school or role compared to educators with more than one year at their current school	16
Figure 8. Teachers who were prepared outside Alaska had higher turnover rates than teachers who were prepared in Alaska, especially those who worked in rural-remote schools	17
Figure 9. Principals who were prepared outside Alaska had higher turnover rates than principals who were prepared in Alaska, especially those who worked in rural-remote schools	18
Figure 10. Teachers who earned lower salaries had higher turnover rates, and the turnover rates of teachers with the lowest salaries were higher in rural-remote areas than in other locales	20
Figure 11. Teacher turnover was higher at schools with higher percentages of students eligible for free or reduced-price lunch or students of color	22
Figure 12. Teacher turnover was higher at schools where the principal also experienced turnover ..	24

Tables

Table 1. Percentage of educators who were prepared in Alaska by school location, 2017/18	19
Table A1. Variables used in the study and source	36
Table A2. Variables used in the regression model	39
Table A3. Districts identified as having better-than-predicted retention rates.	40
Table B1. Educator turnover and retention by year, in percentages	46
Table B2. Number of teachers, principals, and students over time and by locale	47
Table B3. Average turnover and retention rates for teachers and turnover by year, 2012/13–2017/18	49
Table B4. Average turnover and retention rates for principals and turnover by year, 2012/13–2017/18	55
Table B5. Mobility patterns among teachers who moved across districts, years 2012/13 to 2017/18.	59
Table B6. Average teacher salary and number of years in position during the 2017/18 school year, overall and by locale	60
Table B7. Characteristics of teachers during the 2017/18 school year, overall and by locale.	61
Table B8. Average principal salary and number of years in position during the 2017/18 school year, overall and by locale	63
Table B9. Characteristics of principals during the 2017/18 school year, overall and by locale	64
Table B10. Percentage of educators who were new to their school, district, or state over time, 2012/13 to 2017/18	66
Table B11. Percentage of teachers and principals who were new to their school in 2017/18, by educator and school characteristics	67
Table C1. Relationship among teacher, school, and district characteristics and teacher and leadership turnover, 2012/13–2016/17 followed to the next year	68

Boxes

Box 1. Key terms: Turnover and retention	2
Box 2. Data sources, sample, and analysis methods	5
Box 3. Key terms: School locale	7

Educator retention and turnover in Alaska

Many states and school districts in the United States, including Alaska, are finding it increasingly difficult to retain teachers, principals, and superintendents (see, for example, Blazer, 2010; Bordonaro, 2017; Cross, 2017; Palmer, 2017; Seattle Pacific University, 2017; Sutchter, Darling-Hammond, & Carver-Thomas, 2016; Whaley, 2017). In Alaska, this effort is complicated by the state's unique characteristics, including geographic remoteness and a challenging natural environment. The landscape of educator¹ turnover and retention in Alaska differs from other states in several ways, only some of which have been explored in earlier studies.

First, most teachers in Alaska come from outside the state and may have a difficult time adjusting. On average, from 2008–2012, about 64 percent of teachers hired statewide were from outside Alaska (Hill & Hirshberg, 2013). Those teachers often have higher turnover rates than the state's homegrown teachers (Hill & Hirshberg, 2013), and they often need additional supports to acclimate to a new community and unfamiliar living conditions (Olson-Stewart, 2015).

Second, working conditions in Alaska schools can involve serving in multiple roles and teaching multiple grade levels and/or subject areas (Firestone, 1991; Hirshberg, Hill, & Kasemodel, 2014). Teacher workload, lack of satisfaction with district leadership, and challenges with community integration are also barriers to retaining educators in Alaska (Kaden, Patterson, Healy, & Adams, 2016).

Third, living conditions can include extreme weather conditions, months with no sunlight, months with no darkness (the “midnight sun”), and the isolation of living in a remote community without roads, access to supplies, or entertainment. In many rural communities in the state, access to television and the Internet is often limited to the school site.

Finally, Alaska has become less competitive in the regional job market. Although Alaska ranks among the top 10 states for average teacher salary (National Education Association, 2019), districts in other Western states are hiring more educators and increasing wages at a higher rate than Alaska (Hirshberg, Berman, DeFeo, & Hill, 2015). Research from various settings, including Alaska, provides some evidence of a positive effect of financial incentives on retention, although working conditions influence and may eclipse that effect (Beesley, Atwill, Blair & Barley, 2010; Borman & Dowling, 2008; Firestone, 1991; Hanushek, Kain, & Rivkin, 2004; Kaden et al., 2016; Kolbe & Strunk, 2012).

¹ This report uses the term educator when referring to teachers, principals, and superintendents collectively. Some certificated education positions, such as counselors or librarians, were not included in these analyses and therefore are not included in this report's definition of educator.

Box 1. Key terms: Turnover and retention

Turnover: This term refers to instances in which educators leave their school, district, and/or role from one school year to the next (as recorded in the fall of each year). Turnover is the opposite of retention. Turnover includes three categories:

Movers-same district: Teachers and principals who stay in the same role in the same district but change schools from one year to the next.

Movers-other district: Teachers, principals, or superintendents who stay in the same role but change districts from one year to the next.

Leavers: Educators who leave the state (but may continue as an educator) or remain in the state but are no longer educators. Our data do not distinguish between these two conditions. On the advice of our stakeholders, leavers also include educators who remain in their school, district, or the state and change roles (for example, a teacher becomes a principal). This term includes those who leave a brick-and-mortar public school for a school excluded from the sample (described in methods in box 2). Across all years, there were 110 instances of educators changing roles, accounting for less than a third of a percent of educators every year. From a district leader's standpoint, all turnover requires an investment of time and resources. Due to limitations in the data, we were not able to determine whether superintendents changed roles and remained in their district or state.

New-to-school: An educator who is new to a setting or role in any given year. Results presenting new-to-school statistics are similar to that of turnover and are reported in appendix B. These results are included at stakeholder request to provide continuity from previously published figures.

Retention: This term refers to educators who stay in the same setting (school or district) and role (teacher, principal, or superintendent) from one year to the next. Retention is the opposite of turnover. We report findings for within-school retention (the percentage of teachers and principals who stay at their school) and within-district retention (the percentage of superintendents who stay at their district). In previous studies of educator turnover and retention, this category is often referred to as "stayers."

Our definitions of turnover and retention are adapted from those developed by the National Center for Education Statistics (Goldring, Taie, & Riddles, 2014).

The impact of educator turnover

Alaska's struggle to retain qualified educators is concerning because educator turnover at the teacher, principal, or superintendent level is associated with negative student outcomes (Coelli & Green, 2012; Gibbons, Scrutiny, & Telhaj, 2018; Henry, Bastian, & Fortner, 2011; Miller, 2013; Parker-Chenaille, 2012; Snodgrass Rangel, 2018; Waters & Marzano, 2006). Turnover tends to beget turnover, resulting in a cycle of talent loss. Principal turnover in particular appears to have a negative influence on teacher retention, as teachers may be more likely to depart a school after a principal departs (Béteille, Kalogrides, & Loeb, 2011; Blazer, 2010; Grissom & Bartanen, 2019; Matlach, 2015).

Another reason for concern regarding educator turnover is that turnover rates tend to be higher in high-poverty schools (Goldring & Taie, 2018; Lochmiller, Sugimoto, & Muller, 2016; Ronfeldt, Loeb, & Wyckoff, 2013), and educators tend to leave high-poverty schools to work in schools with lower poverty rates (Hanushek et al., 2004). Nearly three-quarters of Alaska's schools are considered high poverty, with 70 percent designated as Title I schools in 2015/16 (Glander, 2017).

In many states, teacher turnover is also consistently higher in rural schools and districts than in other districts (DeFeo, Tran, Hirshberg, Cope, & Cravez, 2017). Rural districts in Alaska with high teacher turnover rates typically have poorer student outcomes, with fewer graduating students and lower reading proficiency than their urban and urban-fringe counterparts. This is related to a pattern of lower educator qualifications in rural areas (Hirshberg et al., 2014). Furthermore, Alaska's homegrown teachers, who have lower turnover rates, typically work in the state's urban school districts, exacerbating disparities in turnover rates and student outcomes between urban and rural areas (Hill & Hirshberg, 2013).

Finally, educator turnover is costly for schools and districts, as administrators must spend resources to recruit and orient a replacement educator. Teacher turnover alone is estimated to cost Alaska school districts at least \$20 million each year (DeFeo et al., 2017).

What this study examined

The purpose of this study is to provide more detailed information about educator turnover and retention in Alaska's public schools. Recent research in Alaska has examined teacher turnover (Hill & Hirshberg, 2013; DeFeo et al., 2017) but has not explored teacher, principal, and superintendent turnover and retention patterns—and the statistical relationships between them—in detail and in the same report. This report fills that gap using statewide data from the 2012/13 through 2017/18 school years (with 2011/12 as the first base year) to describe patterns and relationships among teacher, principal, and superintendent turnover and the community, school, educator, and student characteristics that may be associated with that turnover. At the request of our stakeholders, we also conducted interviews with a small sample of district leaders to learn about what districts are currently doing to improve retention and mitigate the negative impacts of turnover. For additional context, we have provided comparisons to other states with similar findings, when available.

This study addressed the following research questions:

1. What were the teacher, principal, and superintendent (educator) turnover rates by year in Alaska during the 2012/13 to 2017/18 school years?
2. What community, school, educator, and student characteristics are associated with educator turnover?
3. What is the relationship between superintendent and principal turnover and teacher turnover?

A summary of the data sources, sample, and methods used to conduct this study are provided in box 2. For more detail, see appendix A.

Box 2. Data sources, sample, and analysis methods

Data sources: Data for this study came from three sources. The Alaska Department of Education and Early Development (DEED) provided teacher and principal administrative data from 2011/12 through 2017/18, which included information on education, experience, and salary. Regional Educational Laboratory (REL) Northwest compiled publicly available school, district, and community data between 2011/12 and 2017/18 on school locale, enrollment, performance, superintendent turnover, and community labor market conditions. REL Northwest also conducted interviews with eight district leaders to compile turnover mitigation and retention strategies. These districts were selected to include a variety of district enrollment levels, regions of the state, and retention patterns.

Sample: The sample includes teachers and principals from 494 traditional brick-and-mortar public schools from 2011/12 to 2017/18 and superintendents from 2012/13 to 2017/18. Superintendent data were not available for 2011/12. Our analysis does not include educators who were at correspondence schools, boarding schools, and schools operated by the Division of Juvenile Justice (DJJ). If an educator moved from a brick-and-mortar public school to a correspondence, boarding, or DJJ school, they left the sample and were categorized as a “leaver” in subsequent analyses. One district consists of a single boarding school and was dropped from the sample, leading to our analyses including 53 of the 54 districts in the state. Overall, our sample includes at least 95 percent of teachers, 92 percent of principals, and 98 percent of superintendents. Due to these sample restrictions, the study’s sample may be different from samples other entities use to generate reports; therefore, direct comparisons should not be made to other reported data.

Methods: We computed counts, rates, and averages to describe patterns and trends in educator turnover from one year to the next. Turnover rates are calculated for the second year of data available for each group of educators through the last year of data available, with the first available year used as the base year. We report findings as averages over the available data time period or as findings by year. For research question 1, we calculated descriptive statistics to understand the turnover rates for each group of educators. For research questions 2 and 3, we employed descriptive statistics and logistic regression analysis to examine relationships between individual variables and turnover and to examine how leadership departures were related to educator turnover at other levels (for example, principal- and teacher-level compared to the superintendent level).

Our logistic regression model included a set of educator-, school-, and district-level characteristics. At the educator level, we controlled for salary, education level, number of positions held, whether the educator was Alaska educated, and whether the educator taught at multiple schools. At the school level, we controlled for school size, enrollment of economically disadvantaged students, enrollment of students of color, enrollment of English learner students,

school grade level, and principal turnover (whether the principal left the school in the same year or the prior year). At the district level, we controlled for enrollment of economically disadvantaged students, region within the state, and superintendent turnover (whether the superintendent left the district in the same year or the prior year). We report significant findings from the regression models, and for descriptive statistics we report findings that show a difference in turnover rates of 5 percentage points or more between groups. We also estimated a district-level regression to compare actual turnover rates to predicted turnover rates based on district characteristics. Predicted turnover rates that are higher than actual rates suggest that the district is doing better than predicted given their characteristics. We used this regression to identify school districts from which to interview district leaders who agreed to share strategies they used to mitigate turnover and promote retention. Appendix A presents further explanation about data sources, sample, and methods.

The Alaska context

In 2017/18, Alaska had about 7,900 teachers and more than 400 principals who served over 129,000 students in 54 school districts. By far the largest state by land area in the country, Alaska is the seventh smallest in terms of student enrollment and the smallest in terms of the number of teachers (U.S. Department of Education, n.d. a, n.d. b).

Alaska is commonly divided into five regions: Interior, North, Southcentral, Southeast, and Southwest (figure 1). In this report, we explore turnover and retention patterns across these regions. Within a region, we explore turnover and retention patterns by locale (that is, urbanicity). Based on the modified locale codes we used in this study (box 3), the North and Southwest regions do not contain any urban schools. Southcentral Alaska includes Anchorage, while Fairbanks is in the Interior, and Juneau is in the Southeast. All regions have some schools designated as rural remote.

Box 3. Key terms: School locale

To accurately reflect Alaska's unique geography, REL Northwest used National Center for Education Statistics locale classifications, then incorporated data on road access to create a distinction between roadless and road-access communities. We then reviewed these categories with Alaska stakeholders to ensure they fit the Alaska context. Schools throughout this report are associated with one of four locales:

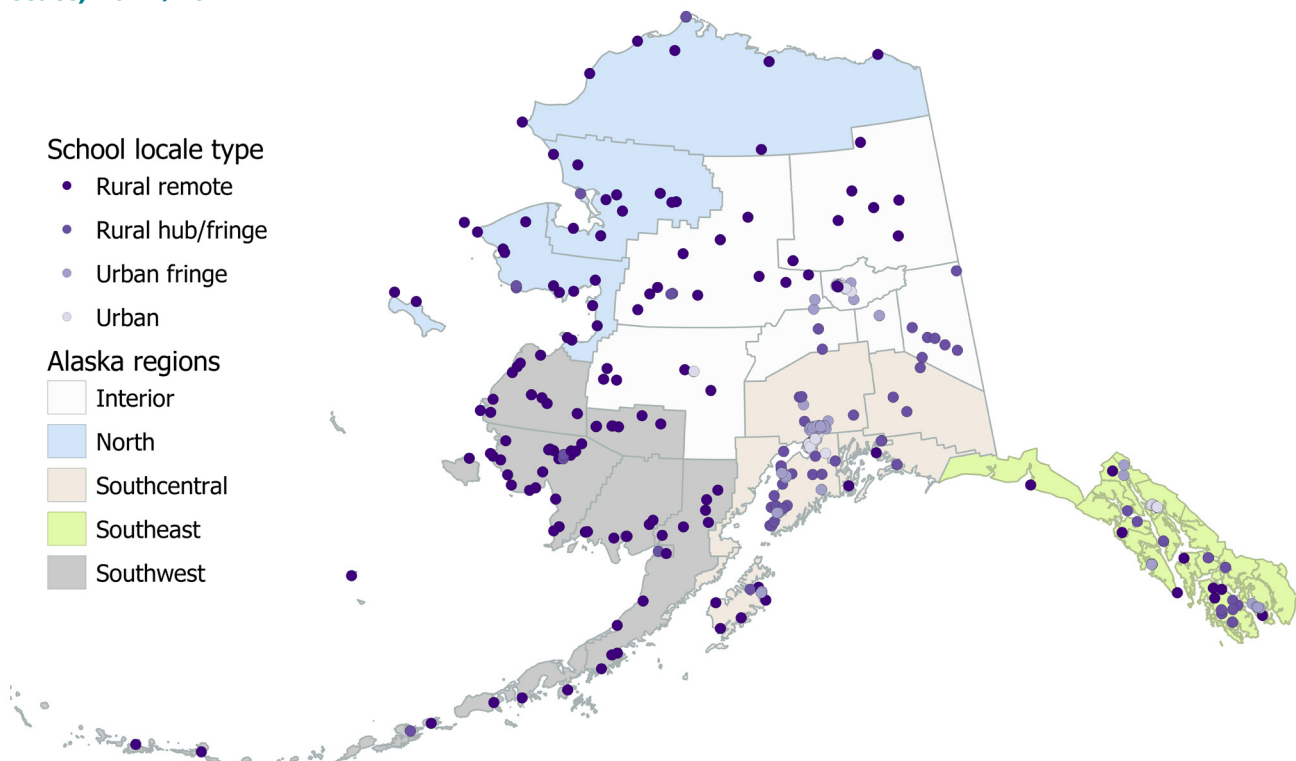
Urban refers to larger cities such as Anchorage, Juneau, or Fairbanks.

Urban fringe refers to on- and off-road communities either near an urban locale or with commercial air access, such as Palmer and Sitka.

Rural-hub/fringe refers to rural-hub communities, such as Bethel, that may be off road, as well as rural-fringe communities, such as Healy, that are on the road system.

Rural remote refers to schools located in small communities in off-road areas that are accessible only by small plane and/or by boat, such as the Pribilof Islands.

Figure 1. Regions of Alaska, school urbanicity, and school locale type within the state, 2017/18



Note: Rural-remote schools are all located off the road system, while other school locale types include a mix of on- and off-road schools.

Source: Authors' analysis of publicly available data.

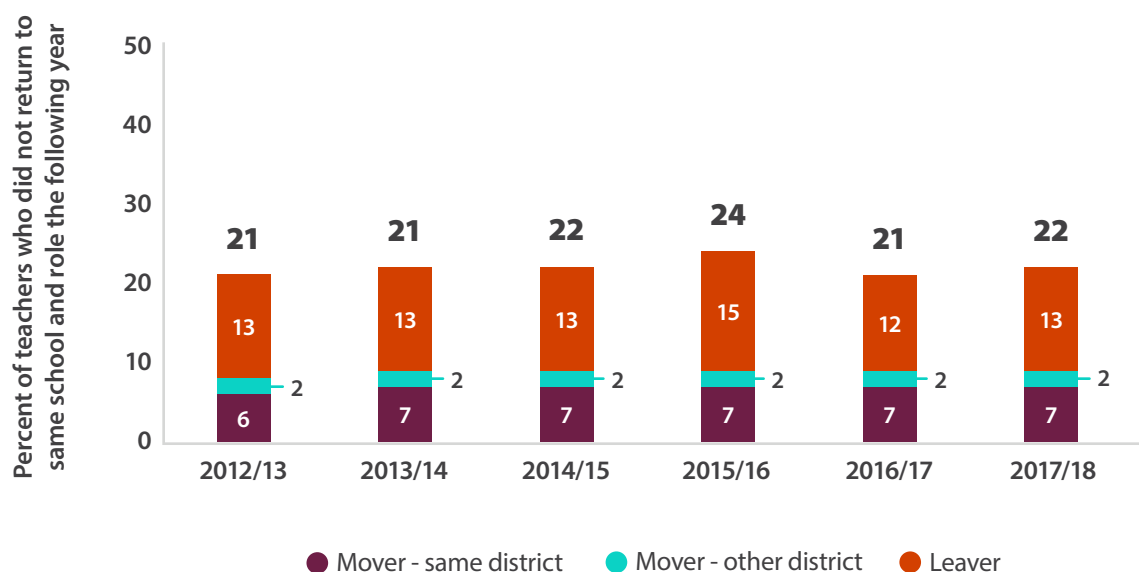
Most students and educators are in urban areas in Alaska. Slightly more than half of Alaska's principals and three-quarters of its teachers serve the 80 percent of students located in urban and urban-fringe schools, reflecting the larger size of those schools compared to rural-remote and rural-hub/fringe schools. In 2017/18, a little more than half of Alaska students attended urban schools (55 percent), about a quarter attended urban-fringe schools (26 percent), and about 10 percent each attended rural-hub/fringe (9 percent) and rural-remote (11 percent) schools. Mirroring these numbers, half of Alaska's teachers (50 percent) worked in urban schools, a quarter (24 percent) worked in urban-fringe schools, and the rest were divided almost equally between rural-hub/fringe (12 percent) and rural-remote (14 percent) schools. A little more than half of Alaska's principals worked in urban or urban-fringe schools (32 percent in urban and 22 percent in urban fringe) and slightly less than half worked in rural schools (17 percent in rural-hub/fringe schools and 29 percent in rural-remote schools).

Findings

From 2012/13 to 2017/18, statewide turnover rates remained steady for teachers at around 22 percent but were more variable for principals (23 to 33 percent) and superintendents (19 to 40 percent); most of the teachers, principals, and superintendents who turned over were leavers

On average, between 2012/13 and 2017/18, 78 percent of teachers were retained, returning to the same school and role the following year, while 22 percent of teachers left their school (see table B1 in appendix B). Of those who left, 13 percent were “leavers” (those who left the state and/or profession and/or changed roles), 7 percent moved to another school in the same district (mover–same district), and the remaining 2 percent left for another district (mover–other district). The latter category remained steady between 2012/13 and 2017/18 (figure 2). There was a peak in the number of leavers in 2015/16 (15 percent).

Figure 2. The percentage of teachers who did not return to their school or role has been steady over time, 2012/13 to 2017/18



Note: The school year listed indicates the follow-up year. For example, the percentage listed for the 2017/18 school year indicates the percentage of teachers from 2016/17 who did not return to the same school in the same role in 2017/18. Values within each bar may not sum to the bar total due to rounding. Sample sizes ranged from 8,168 to 8,611 by year.

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Teacher retention in Alaska is lower than in several other large states, indicating that Alaska may have unique challenges in this area. The percentage of teachers staying in the same school from one year to the next in Alaska between 2012/13 and 2017/18 was comparable to that percentage in Idaho (80 percent; Hanson & Yoon, 2018) and Colorado (79 percent; Meyer, Espel, Weston-Sementelli, & Serdiouk, 2019)—two states with large rural areas. However, Alaska’s retention rate was lower than other large states in terms of land area.²

The percentage of movers is comparable to that of several other states, but the percentage of leavers is higher, suggesting a need to understand the unique factors in Alaska that may be contributing to these higher leaver rates. The percentages of movers in Alaska is similar to other states with available data.³ The percentages of leavers in Alaska is similar to Colorado’s (13 percent, respectively; Meyer et al., 2019) but higher than in other states with available data.⁴

Turnover patterns have been more variable over the same time period for principals and superintendents. The higher variability in turnover rates for principals and superintendents relative to teachers is due in part to a smaller number of principals and superintendents. On average, from 2012/13 to 2017/18, 73 percent of principals returned to the same school and the same position in the following year and 27 percent left (see table B1 in appendix B). Of those who left their school, 5 percent moved to a different school in the same district (movers–same district), 3 percent moved to a different school in a different district (movers–other district), and 19 percent left the state, profession, and/or their role (leavers). Alaska’s combined percentage of principals who moved is similar to or slightly below other states (9 percent in Iowa, 11 percent in Minnesota, and 12 percent in Wisconsin on average between 2006/07 and 2010/11; Podgursky et al., 2016); comparable leaver percentages in other states were not available.

The highest recorded year of principal turnover during the study timeframe was 2015/16, when 33 percent of principals did not return to their school the following year (figure 3). Of those who did not return, 25 percent were leavers—they did not return as a principal anywhere in Alaska the following year.

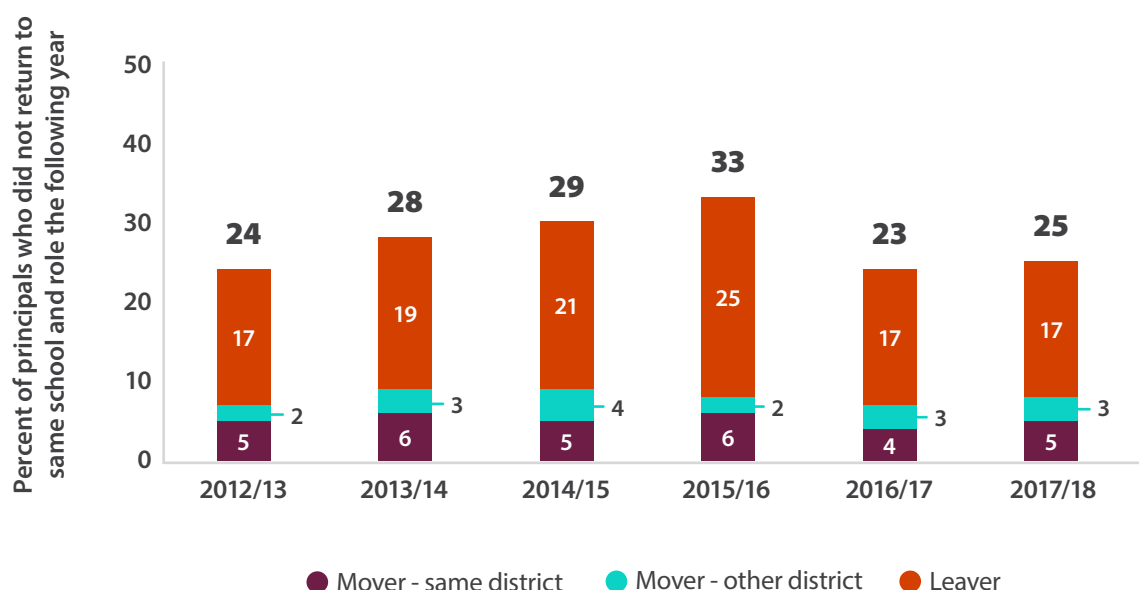
² Ninety-one percent in Minnesota and 92 percent in Wisconsin between 2006/07 and 2010/11 (Podgursky, Ehlert, Lindsay, & Wan, 2016), and 86 percent in Nebraska, 84 percent in South Dakota, and 82 percent in Missouri between 2015/16 and 2016/17 (Meyer et al., 2019).

³ Six percent of movers in Kentucky on average between 2007/08 and 2011/12, 8 percent in Missouri, 7 percent in Nebraska between 2015/16 and 2016/17, and 7 percent in South Dakota between 2015/16 and 2016/17 (Lochmiller, Sugimoto, & Muller, 2016; Meyer et al., 2019).

⁴ Thirteen percent of leavers in Colorado, 8 percent in Kentucky on average between 2007/08 and 2011/12, 10 percent in Missouri, 8 percent in Nebraska between 2015/16 and 2016/17, and 9 percent in South Dakota between 2015/16 and 2016/17 (Lochmiller, Sugimoto, & Muller, 2016; Meyer et al., 2019).

Meanwhile, about a quarter of superintendents moved or left every year, with a peak in 2014/15 (40 percent) and a low in 2015/16 (19 percent; see figure 4). Alaska's percentage of superintendents who moved between districts (becoming a superintendent in another district in Alaska) is comparable to some other states (7 percent in Iowa and 6 percent in Minnesota and Wisconsin; Podgursky et al., 2016); comparable leaver percentages in other states were not available.

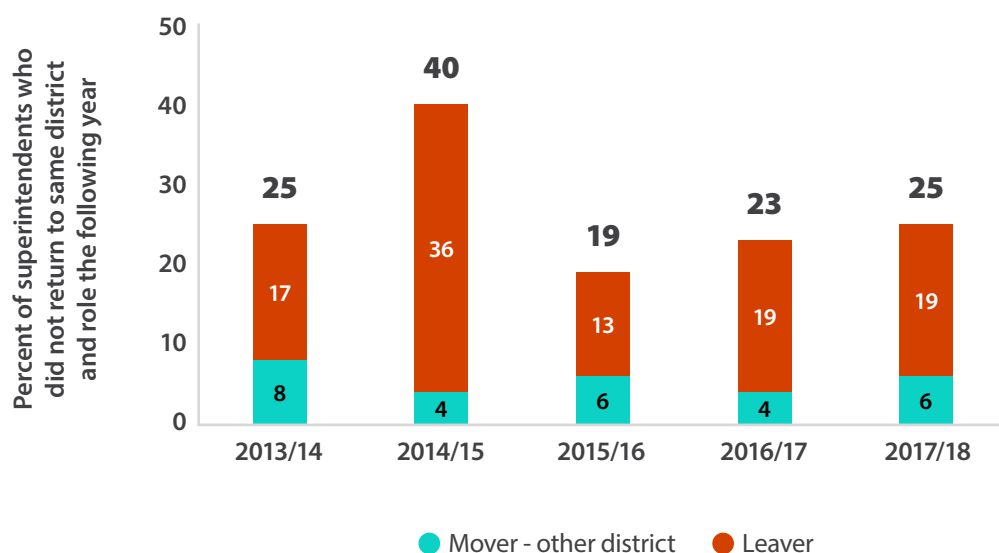
Figure 3. The percentage of principals who did not return to their school or role varied over time, 2012/13 to 2017/18



Note: The school year listed indicates the follow-up year. For example, the percentage listed for the 2017/18 school year indicates the percentage of principals from 2016/17 who did not return to the same school in the same role in 2017/18. Values within each bar may not sum to the bar total due to rounding. Sample sizes ranged from 375 to 406 by year.

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Figure 4. The percentage of superintendents who did not return to their district or role has varied over time, 2013/14 to 2017/18



Note: The school year listed indicates the follow-up year. For example, the percentage listed for the 2017/18 school year indicates the percentage of superintendents from 2016/17 who did not return to the same district in the same role in 2017/18. Superintendents are not able to move schools (as they are at the district level) and thus the category of “mover–same district” does not apply and is not included. Sample size is 53 for each year. Values within each bar may not sum to the bar total due to rounding.

Source: Authors’ analysis of publicly available data.

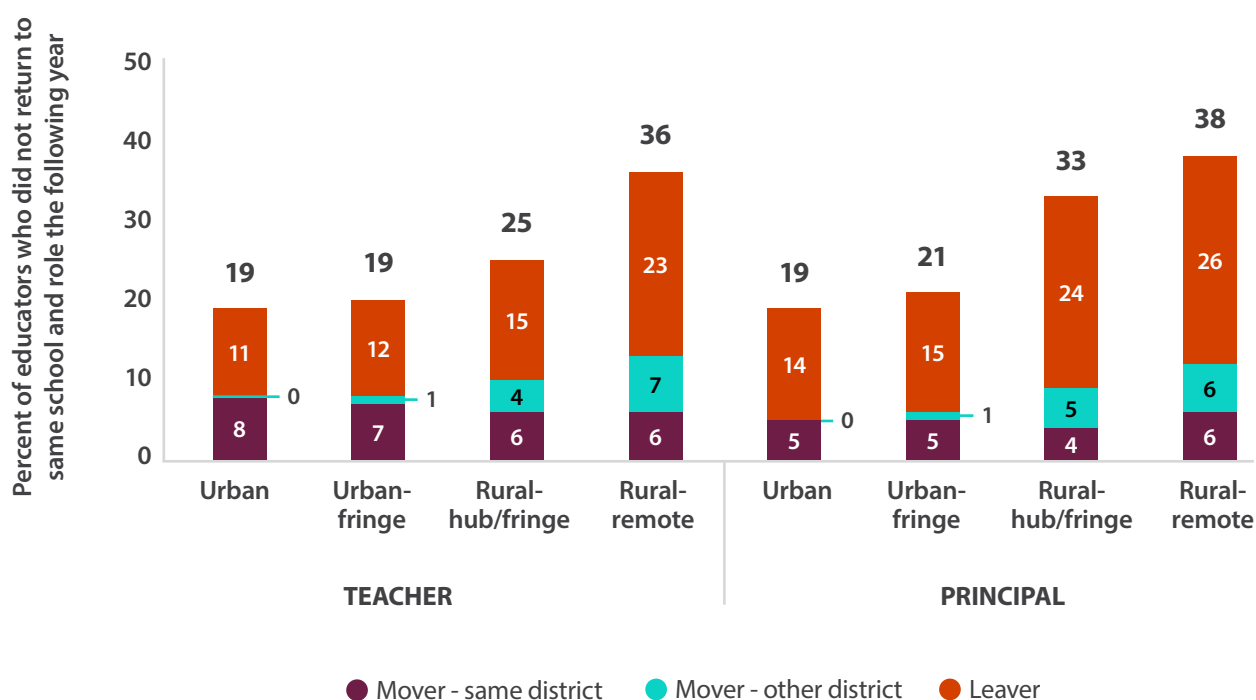
Turnover rates for teachers and principals were higher in rural areas than in urban areas, with the highest rates in more remote schools

The percentage of teachers who did not return to their school or role the following year was much higher in rural-remote and rural-hub/fringe schools compared to urban and urban fringe schools. From 2012/13 to 2017/18, the average turnover rate for teachers in urban locales was 19 percent compared to 36 percent of rural-remote teachers. In contrast, the proportion of teachers who turned over was similar in rural and urban schools in Colorado, Missouri, Nebraska, and South Dakota between 2015/16 and 2016/17 (Meyer et al., 2019).

Among the 36 percent of teachers in rural-remote schools who did not return to their school the following year, 6 percent moved to a different school in the same district, 7 percent moved to a different district, and 23 percent did not return to any school in Alaska (figure 5). Even after controlling for educator, school, and district characteristics, working in a rural-remote school was significantly associated with an increased likelihood that a teacher

would not return to their school the following year (see table C1 in appendix C). Principal turnover patterns resembled teacher patterns, but with a more pronounced difference between rural-remote and urban schools. Among rural-remote principals, 38 percent did not return to the same school in 2017/18 compared to 19 percent of urban principals, a difference of 19 percentage points (see figure 5). Turnover rates for rural-remote areas were consistently higher across time (from 2012/13 to 2017/18) for both teachers and principals (see tables B3 and B4 in appendix B).⁵

Figure 5. A higher percentage of teachers and principals in rural-remote and rural-hub/fringe schools, compared to urban and urban-fringe schools, did not return to their school or role



Note: Figure presents the average turnover rates across all years (2012/13-2017/18). Values within each bar may not sum to the bar total due to rounding. The combined sample sizes across study years for teachers are: urban (N = 25,042), urban fringe (N = 11,624), rural-hub/fringe (N = 5,978), and rural remote (N = 7,319). The combined sample sizes across study years for principals are: urban (N = 777), urban fringe (N = 515), rural-hub/fringe (N = 418), and rural remote (N = 649).

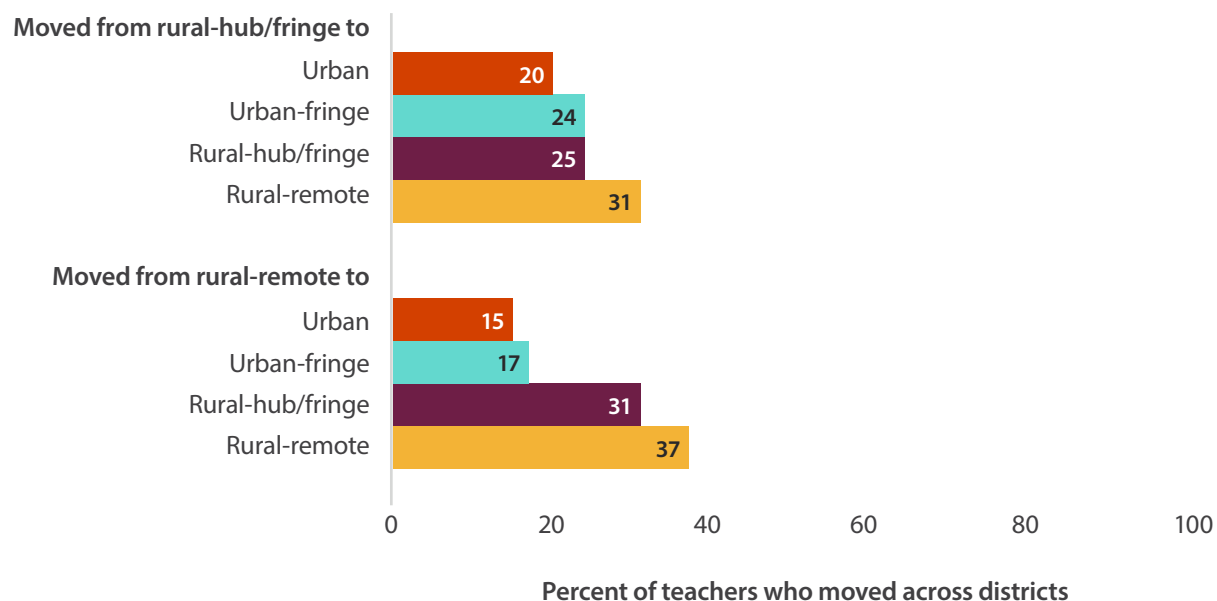
Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

⁵ The percentage of teachers leaving the state was much lower in West Virginia than it was in Alaska (about 9 percent between 2007/08 and 2011/12), and there were no differences across locales (Lochmiller, Adachi, Chesnut, & Johnson, 2016). However, there were differences for administrators, with about 12 percent of administrators from rural and town schools leaving the state compared to a little under 9 percent for those leaving a suburban or city school, showing a similar trend to Alaska.

Many teachers who changed districts moved from one rural school to another rural school

About 2 percent of Alaska’s teachers moved across districts (mover-other district) between 2012/13 and 2017/18. Over three-quarters of those teachers (76 percent) left their rural school (either rural-remote or rural-hub/fringe) and most moved to another rural school (figure 6 and table B5 in appendix B).

Figure 6. Most teachers from rural-remote and rural-hub/fringe schools who moved across districts moved to another rural district



Note: Figure presents the average turnover rates across all years (2012/13–2017/18). The combined sample size across study years for each group are: originated in rural hub/fringe (N = 169), originated in rural remote (N = 422).

Source: Authors’ analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Teachers and principals who were prepared outside Alaska and teachers who were in their first year in either their school or the Alaska K–12 school system were more likely to turn over the following year

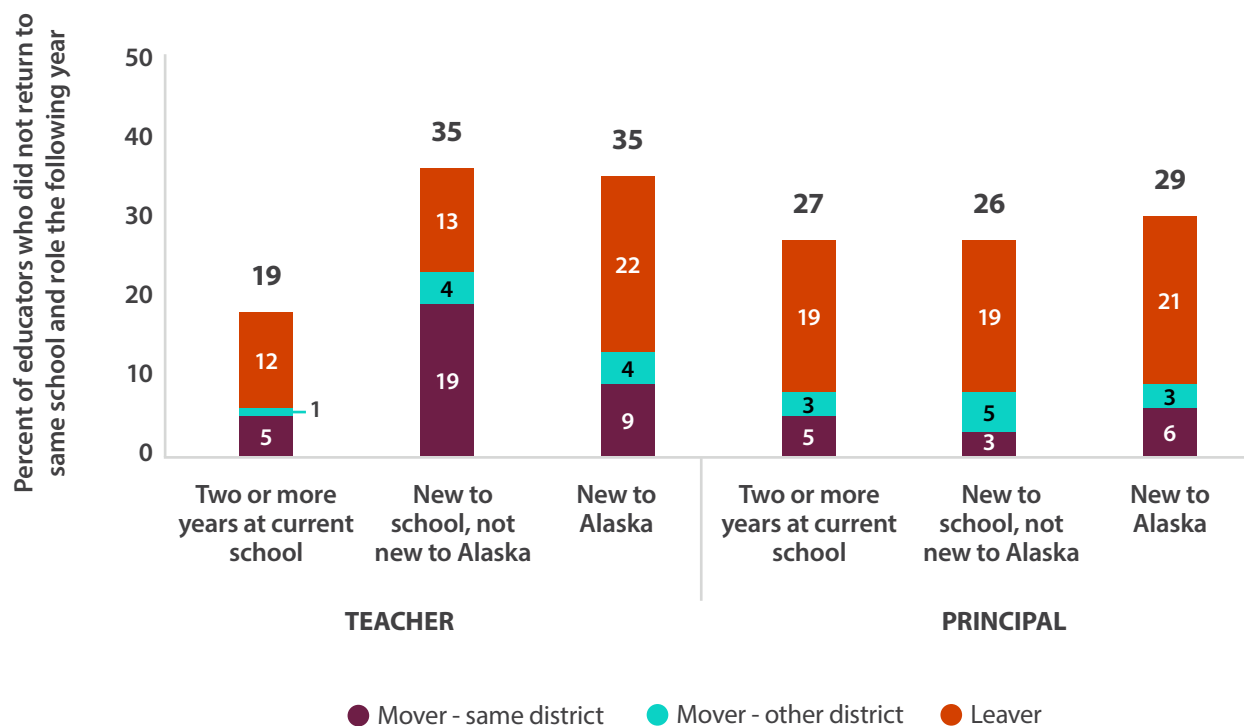
Teachers and principals who were new to the state or new to their school had higher turnover rates than educators who had spent at least one year at their school. During the 2017/18 school year, the average teacher had five consecutive years in the state and the average principal had four consecutive years in the state (see tables B6 and B8 in appendix B). From 2012/13 to 2017/18, the average turnover rate for teachers who were new to the state and teachers who were new to their school (but had previously taught in Alaska) was 35 percent, 16 percentage points higher than the rate for teachers who had been at their current school for two or more years (figure 7). Principals who were new to the state turned over at higher rates compared to those with two or more years of experience at their school (29 percent compared to 27 percent); however, turnover was marginally lower for principals who were new to their school but not new to Alaska (26 percent).

The results show that teachers new to the state or new to their school were more likely to leave their school compared to teachers who had been at their school for two or more years. This pattern holds even after controlling for teacher, school, and district characteristics. This relationship was not statistically significant for principals (see table C1 in appendix C).

These patterns have implications for differential retention rates across locales, as a higher percentage of teachers in rural-remote schools were in their first year of teaching in Alaska compared to the urban, urban-fringe, and rural-hub/fringe schools. The percentage of teachers who were in their first year in the state was 27 percent for teachers in rural-remote schools, 14 percentage points higher than in urban schools (see table B7 in appendix B).⁶ The percentage of teachers who were in their first year at their school (but not new to Alaska) was 8 percent in rural-remote schools, 3 percentage points higher than in urban schools.

⁶ In comparison, differences in Oklahoma between locales and length of time at a school were statistically insignificant. Regardless of the locale where teachers taught, they had an 87 percent chance of being employed after their first year (Lazarev, Toby, Zacamy, Lin, & Newman, 2017). The chance of being employed after their fourth year fell to about 71 percent except in town schools, where it was at 74 percent (town schools are one category of non-rural schools in the report, along with city/urban and suburb).

Figure 7. A higher percentage of educators who were in their first year in Alaska or their first year at a school did not return to the same school or role compared to educators with more than one year at their current school



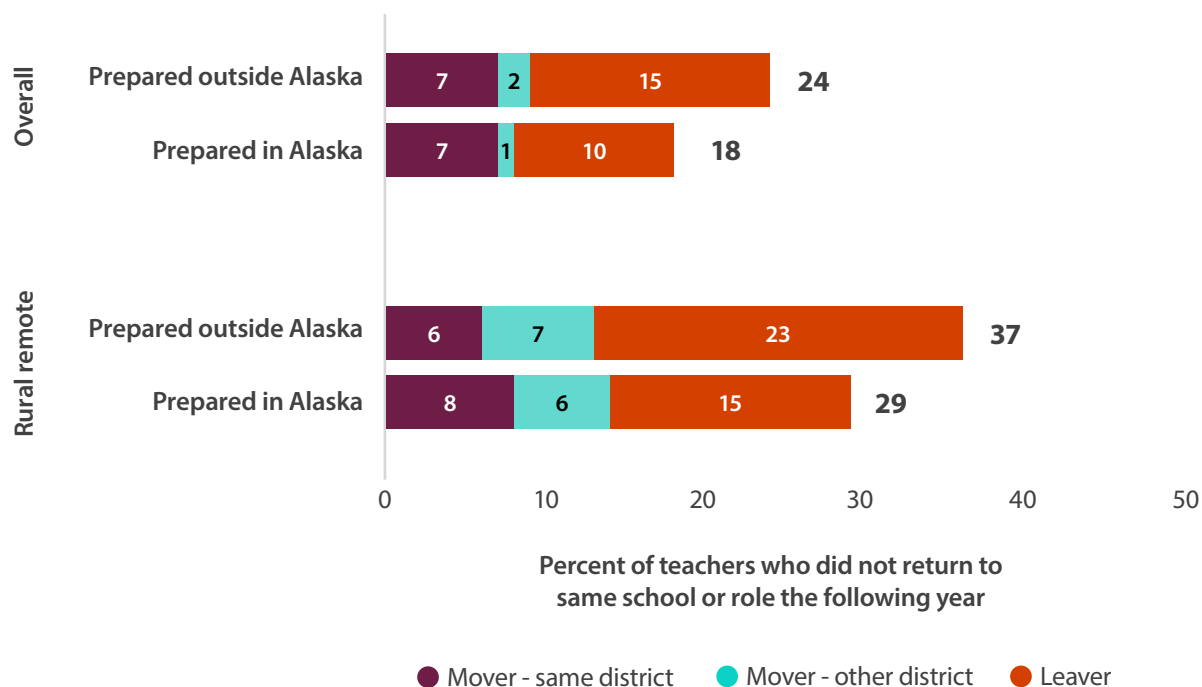
Note: Figure presents the average turnover rates across all years (2012/13–2017/18). Values within each bar may not sum to the bar total due to rounding. The combined sample sizes across study years for teachers are: two or more years at current school (N = 32,621), new to school, not new to Alaska (N = 3,520), and new to Alaska (N = 5,211). The combined sample sizes across study years for principals are: two or more years at current school (N = 1,408), new to school, not new to Alaska (N = 146), and new to Alaska (N = 409).

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Teachers who were prepared outside Alaska were more likely to leave—a pattern similar to teachers who were new to Alaska.⁷ Between 2012/13 and 2017/18, the average annual turnover rate for teachers who were prepared outside Alaska was 24 percent compared to 18 percent for teachers who were prepared in Alaska (figure 8).

⁷ Among educators in the 2017/18 school year, 58 percent of teachers and 43 percent of principals were prepared outside Alaska (see tables B2 and B3 in appendix B).

Figure 8. Teachers who were prepared outside Alaska had higher turnover rates than teachers who were prepared in Alaska, especially those who worked in rural-remote schools



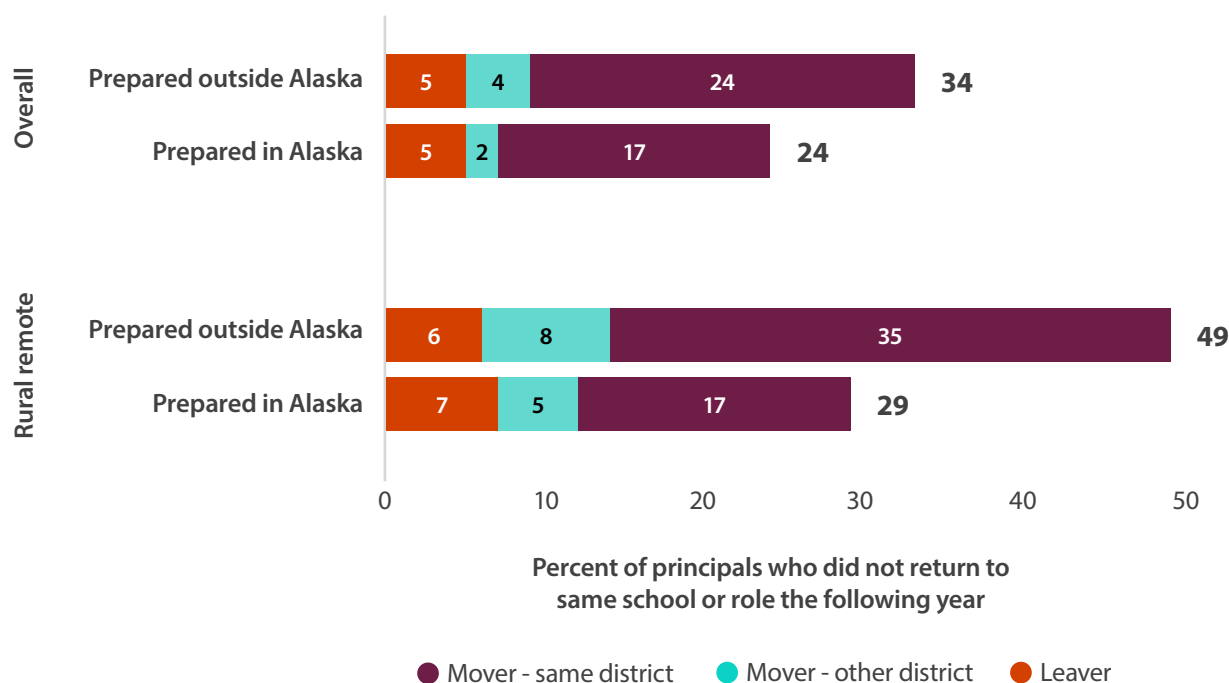
Note: Figure presents the average turnover rates across all years (2012/13–2017/18). Values within each bar may not sum to the bar total due to rounding. The combined sample sizes across study years for the overall group are: prepared outside Alaska (N = 28,912) and prepared in Alaska (N = 19,202). The combined sample sizes across study years for rural remote are: prepared outside Alaska (N = 5,365) and prepared in Alaska (N = 1,492).

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

The difference between these two groups was much greater for principals (a 10 percentage point difference). Between 2012/13 to 2017/18, the average turnover rate for principals who were prepared outside Alaska was 34 percent compared to 24 percent of principals who were prepared in Alaska (figure 9).

The differences between those prepared in Alaska and those prepared outside Alaska were even more pronounced for educators in rural-remote schools and particularly for principals. Rural-remote principals who were prepared outside Alaska had a turnover rate that was 20 percentage points higher than their Alaska-educated counterparts (see figure 9), as compared to an 8-percentage point difference for teachers in rural-remote schools. Being prepared outside Alaska was associated with a higher likelihood of turnover for both teachers and principals (see table C1 in appendix C) even after controlling for educator, school, and district factors. For principals, it was the only educator characteristic that was significantly associated with turnover after controlling for educator, school, and district factors (see table C1 in appendix C).

Figure 9. Principals who were prepared outside Alaska had higher turnover rates than principals who were prepared in Alaska, especially those who worked in rural-remote schools



Note: Figure presents the average turnover rates across all years (2012/13–2017/18). Values within each bar may not sum to the bar total due to rounding. The combined sample sizes across study years for overall groups are: prepared outside Alaska (N = 947) and prepared in Alaska (N = 1,194). The combined sample size across study years for the rural-remote group are: prepared outside Alaska (N = 312) and prepared in Alaska (N = 295).

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

We also examined whether turnover patterns among Alaska-prepared teachers were similar to those of Alaska teachers prepared in other states in the Northwest. Alaska-prepared teachers had a turnover rate of 18 percent, while teachers prepared in other states had a turnover rate of 25 percent. Among the Northwest states, we found a turnover rate of 21 percent for teachers who were prepared in Washington and Montana, 22 percent for those prepared in Idaho, and 24 percent for those prepared in Oregon (see table B3 in appendix B).

Few teachers in rural-remote and rural-hub/fringe schools were prepared in Alaska. Schools in rural-remote and rural-hub/fringe areas had a much lower share of teachers who were prepared in Alaska compared to their more urban counterparts (urban and urban fringe). Only 24 percent of rural-remote teachers and 29 percent of rural-hub/fringe teachers were prepared in Alaska, compared to 53 percent of teachers in urban and 37 percent

in urban-fringe schools (table 1). Similarly, more principals in urban schools were Alaska educated compared to those in rural schools. Because the location of preparation was a significant predictor of turnover, the uneven distribution of educators who were prepared outside Alaska may disproportionately impact rural-remote and rural-hub/fringe schools.

Table 1. Percentage of educators who were prepared in Alaska by school location, 2017/18

Locale	Teachers	Principals
Overall	42	57
Urban	53	73
Urban fringe	37	56
Rural hub/fringe	29	38
Rural remote	24	53

Note: The sample sizes for teachers are: overall (N = 7,464), urban (N = 3,844), urban fringe (N = 1,864), rural-hub/fringe (N = 881), and rural remote (N = 875). The sample sizes for principals are: overall (N = 366), urban (N = 113), urban fringe (N = 86), rural-hub/fringe (N = 66), and rural remote (N = 101).

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

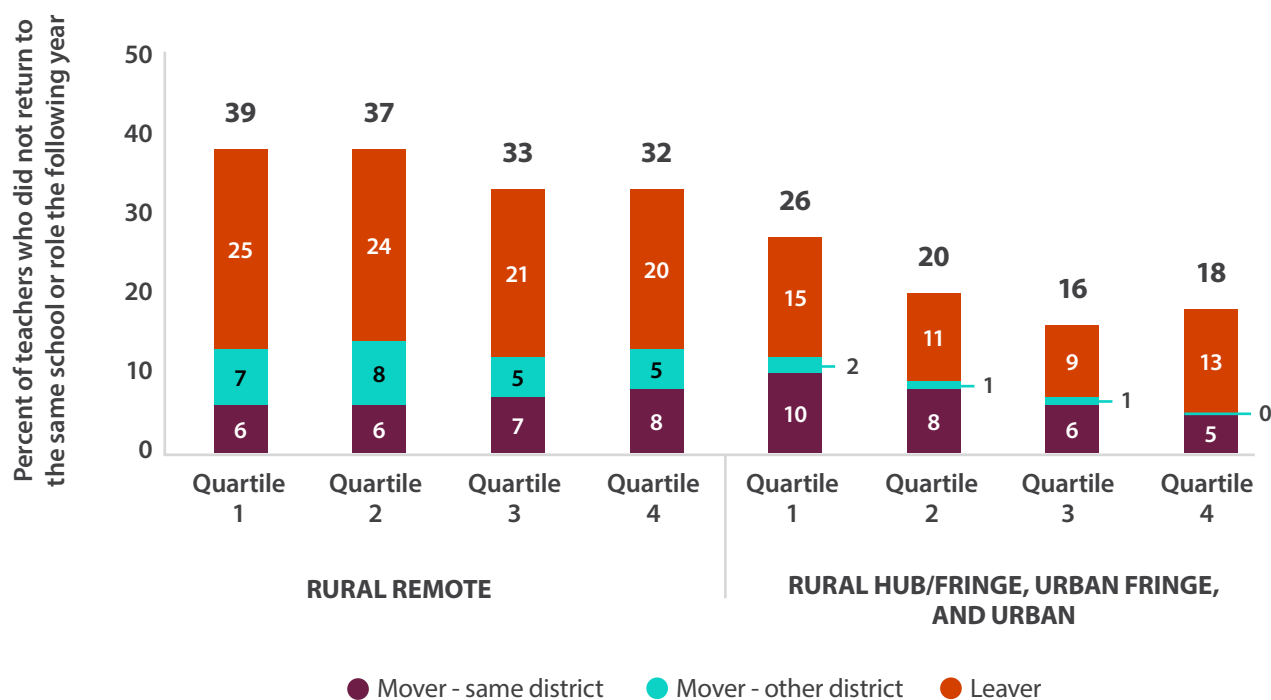
Interviews with district leaders provide additional insight on the relationship between turnover and where educators were prepared. One leader in a rural-remote district reported that although more and more Alaska-educated teachers have been coming into the district, they still had about a quarter of their teaching force who had been educated out of state. The leader added that “brand-new-to-Alaska teachers don’t last very long” in the district.

Interviewees cited a range of possible reasons for this high turnover and also emphasized that the reasons vary depending on district demographics and locale. Several interviews mentioned the sense of isolation, which is driven by the difficulty of making connections with the local community; a lack of non-work social activities; limited communications with the outside world; and the time, cost, and weather-related challenges of traveling to larger in-state communities or to visit family in other states. District leaders also mentioned a lack of opportunities for professional growth compared to larger districts and the difficulty of buying a home in some communities due to limited stock. Two district leaders said they make a concerted effort to hire teachers who come not only from Alaska but from the local community.

Lower salaries, holding more than one position, and teaching at more than one school site were related to increased teacher turnover

Teacher turnover was higher in lower salary brackets, with the lowest 25 percent of teacher earners having a 29 percent turnover rate compared to 19 percent turnover among the highest 25 percent of earners (see table B3 in appendix B). The turnover rates among teachers with the lowest salaries were higher in rural-remote areas than in other locales (figure 10). Even after controlling for teacher, school, and district factors, having a lower salary was associated with a lower likelihood of a teacher returning to their school the following year (see table C1 in appendix C). There was no clear relationship between salary and turnover for principals.

Figure 10. Teachers who earned lower salaries had higher turnover rates, and the turnover rates of teachers with the lowest salaries were higher in rural-remote areas than in other locales



Note: Quartile 1 is \$10,300 to \$59,099; quartile 2 is \$59,100 to \$68,800; quartile 3 is \$68,801 to \$78,099; and quartile 4 is \$78,100 to \$112,500. Figure presents the average turnover rates across all years (2012/13–2017/18). Values within each bar may not sum to the bar total due to rounding. The combined sample size across study years for rural remote is N = 7,319, and the sample sizes for urban, urban fringe, and rural hub/fringe are all N = 42,644.

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Statewide, almost one in five teachers (18 percent) held more than one position at their school (for example, special education teacher and on-site supervising teacher) in 2017/18 and nearly one in 10 (9 percent) worked at more than one school site (see table B7 in appendix B). Even after controlling for educator, school, and district factors, holding more than one position at one's school and working at multiple schools increased the likelihood of not returning the following year (see table C1 in appendix C). Few principals held more than one position at their school (5 percent) or were the principal of more than one school (16 percent; see table B9 in appendix B), and there was no clear relationship between these factors and the likelihood of returning the following year (see table C1 in appendix C).

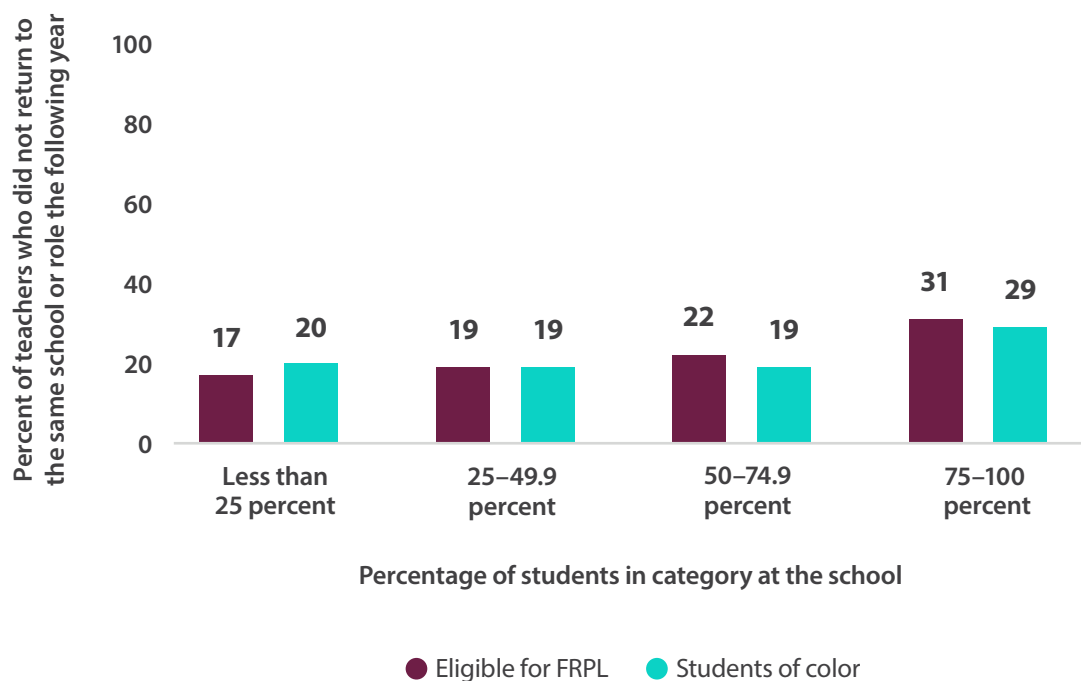
District leader interviews confirmed that teachers often take on multiple roles—participating in curriculum mapping and coding, serving as peer evaluators, leading sections of inservice trainings, or temporarily taking an administrator role if they hold the appropriate license. Leaders in smaller districts said they could not meet students' needs if staff members did not serve in multiple roles. Depending on the district, its budget, and the terms of its teacher contracts, these multiple roles may or may not be accompanied by a stipend or other form of compensation.

High-poverty, high-diversity, and smaller schools were more likely to experience teacher turnover

Teacher turnover was higher in schools where at least three-quarters of the student population was eligible for free or reduced-price lunch (31 percent average turnover between 2012/13 and 2017/18; figure 11) and in schools where three-quarters of students identified as a student of color (29 percent turnover), compared to the average school turnover rate of 22 percent. In 2017/18, 52 percent of Alaska's students were students of color (Alaska Department of Education and Early Development, 2018).⁸

⁸ In this respect, Alaska is similar to the nation (51 percent of students of color in public elementary and secondary schools in 2015), although the composition of students of color is different in Alaska than it is in the nation. In 2015, American Indian/Alaska Native students represented 1 percent of students in the nation, compared to 23 percent in Alaska (U.S. Department of Education, 2018). In 2017/18, 41 percent of Alaska students of color were Alaska Native (Alaska Department of Education and Early Development, 2018).

Figure 11. Teacher turnover was higher at schools with higher percentages of students eligible for free or reduced-price lunch or students of color



FRPL is free or reduced-price lunch.

Note: Figure presents the average turnover rates across all years (2012/13-2017/18). The combined sample size across study years for percent of students that qualify for free or reduced-price lunch by group: Less than 25 percent (N = 7,254), 25 to 49.9 percent (N = 19,526), 50 to 74.9 percent (N = 9,947), and 75 to 100 percent (N = 10,316). The combined sample size across study years for percent students of color by group: Less than 25 percent (N = 6,381), 25 to 49.9 percent (N = 18,511), 50 to 74.9 percent (N = 10,658), and 75 to 100 percent (N = 14,413).

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Smaller schools had higher turnover rates than larger schools. Schools with fewer than 25 students had a 47 percent turnover rate and schools with 25 to 49 students had an average turnover rate of 35 percent (see table B3 in appendix B).

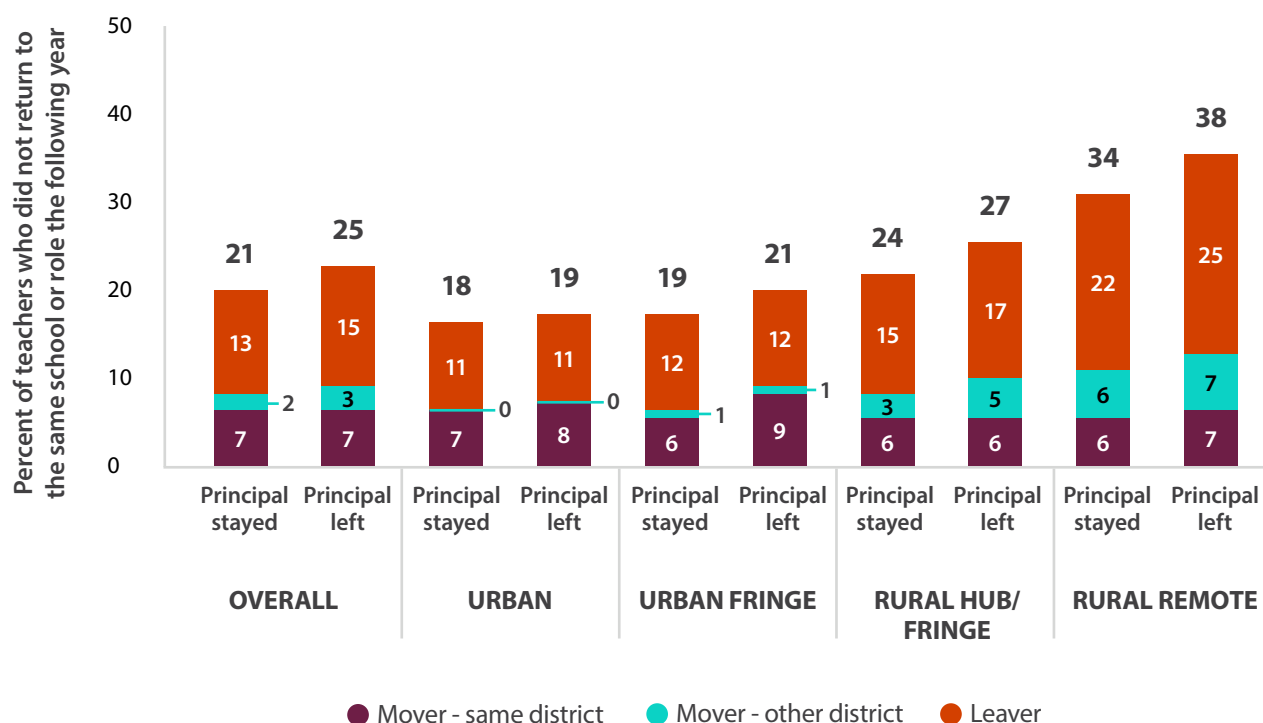
Regression analysis confirmed that teachers had a higher likelihood of leaving their school if the school was high-poverty or high-diversity and a lower likelihood of leaving their school if more students were enrolled. The percentage of English learners in a school did not have a clear relationship with retention after controlling for teacher, school, and district factors (see table C1 in appendix C).

These findings did not hold for principals. Descriptive statistics showed that principals in high-poverty, high-diversity, and smaller schools had higher turnover rates, but these differences disappeared when controlling for other school, district, or community characteristics. This may be due to the relatively small number of principals in our study, which made it challenging to detect patterns between characteristics and outcomes. This may also be due to unobserved factors that have a stronger relationship to principal turnover than school poverty, diversity, and size. Past research has shown students' levels of academic achievement and behavior, accountability mandates, paperwork, autonomy, bureaucracy, or stress to be key factors (see, for example, Blazer, 2010; Matlach, 2015).

Principal and teacher turnover were linked: Schools that experienced principal turnover also had high teacher turnover. We found no evidence that superintendent turnover was related to teacher or principal turnover.

Principal turnover was associated with a 4 percentage-point increase in teacher turnover rates (21 percent among teachers at a school where the principal stayed compared to 25 percent at a school where the principal left; see table B3 in appendix B). Teacher and principal departure from a school were positively related, with a higher likelihood of teacher departure in the same school in the same year if a principal left (but not in later years—that is, there was no lagged or delayed relationship; see table C1 in appendix C). These trends were consistent across school locales (figure 12), and results from regression analysis did not demonstrate different relationships by locale (see table C1 in appendix C). We found no evidence that superintendent turnover was related to teacher or principal turnover.

Figure 12. Teacher turnover was higher at schools where the principal also experienced turnover



Note: Figure presents the average turnover rates across all years (2012/13-2017/18). Values within each bar may not sum to the bar total due to rounding. The combined sample sizes across study years by group are: overall (N = 49,963) urban (N = 25,042), urban fringe (N = 11,624), rural hub/fringe (N = 5,978), and rural remote (N = 7,319).

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Implications

This study suggests two overall considerations for increasing educator retention in Alaska: human resources and school conditions.

Human resources

Increase the supply of Alaska-educated teachers

Alaska education leaders and policymakers may want to invest in strategies that can increase the supply of Alaska-educated or homegrown teachers, especially in rural-hub/fringe and rural-remote schools. In 2017/18, 29 percent of teachers in rural-hub/fringe schools and 24 percent of teachers in rural-remote schools were educated in Alaska. Teachers and principals who were educated in Alaska were more likely to stay at their school, especially in rural-remote schools.

Increasing the supply of educators who are prepared in Alaska education programs may be an effective way to reduce turnover rates. This is in line with the University of Alaska's (UA's) goal to increase the share of UA-educated new teachers hired in the state from 43 percent in 2018 to 90 percent by 2025 (Associated Press, 2018). However, in recent years, the number of teacher candidates graduating from Alaska education programs has decreased, with about 300 candidates graduating from Alaska education programs in 2011/12, 218 in 2012/13, 252 in 2013/14, 224 in 2014/15, and 211 in 2015/16 (U.S. Department of Education, 2017).

Additionally, supporting career and technical education teacher pathway initiatives and/or grow-your-own teacher programs that help paraprofessionals and other teachers with limited certification become fully certified may be another way to increase the supply of Alaska-prepared educators. There are examples from other states, and Alaska may want to review legislation adopted to support and fund career pathways, teacher preparation, and licensure reform (Aragon, 2018).

Educators prepared in Alaska tended to work more frequently in urban areas, and that may reflect a preference on the part of the educators (for example, for staying in the urban area where they received their degree) or perhaps that more college-educated Alaskans live in urban areas. The state may need to make a corresponding effort to recruit educator preparation program candidates from rural Alaska, although more evidence is needed on whether educator preparation program candidates originally from rural areas tend to return to rural areas to teach or lead schools. A challenge in recruiting rural candidates is

that they live in areas that differ dramatically from the urban areas in which Alaska's educator preparation programs are located. Providing rural candidates with additional supports to learn to live in new surroundings and offering opportunities to study remotely from their home location may encourage more individuals located in rural areas to enter and complete an education degree.

Look for the right fit

Collaborating across districts at the recruitment phase may improve retention by increasing the chances of hiring individuals who are a good fit for each district's circumstances. Unique conditions across districts and the remoteness of some areas can make this collaboration difficult, yet some leaders have been finding creative solutions. One option is for leaders to keep track of promising candidates who are not a good fit for their own district and to facilitate a connection between candidates and leaders in a district that may be a better fit (see appendix D for more detailed interview findings).

Interviewees stressed the importance of hiring people who can be expected to stay and will fit into the community. To that end, they mentioned the importance of establishing strong personal connections; being candid and detailed about the local community; and checking for understanding, readiness, and fit during the initial conversations with candidates. Interviewees stated that hiring locally can help administrators find the right fit, particularly in smaller and more rural communities, but in general the initial conversations with a candidate are critical, regardless of where the candidate is from.

Advertise Alaska

Three district leaders interviewed for the study suggested collaborating to create media communications materials that present teaching in the state as an attractive option for potential candidates. Ideas included portraying the benefits of the new retirement system and also better preparing candidates for the realities of living in rural Alaska (see appendix D for more detailed interview findings).

School conditions

Provide rural schools with additional support for educator retention

Overall, rural-hub/fringe and rural-remote schools had the highest educator turnover rates compared to urban fringe and urban schools. Some rural-remote schools may have particular challenges that contribute to higher turnover, such as challenging living and working conditions and higher levels of out-of-state educators.

The qualitative findings in this study shed some light on possible reasons for why educators leave rural-remote and rural-hub/fringe schools. In addition to reasons common to many districts, such as retirement and family obligations, several of these were factors related to life in rural Alaska: extreme weather conditions; geographic, social, cultural, and professional isolation; high costs of living; the inability to purchase housing; burdensome workloads; and few opportunities for professional growth.

High educator turnover in rural-remote schools has equity implications, as a majority of historically underserved students in Alaska are concentrated in rural-remote schools. During the 2017/18 school year, 84 percent of rural-remote schools had a student population in which 75 percent or more of students were eligible for free or reduced-price lunch, compared to only 22 percent of urban schools. Consequently, schools with 75 percent or more of students who were eligible for free or reduced-price lunch and schools with enrollment of students of color above 75 percent had higher teacher turnover rates compared to less disadvantaged and less racially diverse schools. Targeting resources to rural-remote schools that have higher concentrations of underserved students may allow for a more equitable use of limited resources. Below, we present four additional considerations for increasing retention in rural schools.

Build trust and sense of belonging

Interviewees felt that one strategy with strong potential for improving educator retention is improving relationships among teachers, administrators, and the community. This gives educators a sense of trust and belonging that encourages them to stay, especially in areas with living and working conditions unfamiliar to non-local educators. Interviewees cited some potential ways of accelerating educators' sense of belonging, such as helping recent hires make friends in the community by matching them with a host family, introducing them to local activities, and developing a support group of colleagues.

Offer educators financial and non-financial incentives

Our analysis showed that the relationship between higher salaries and lower turnover was stronger in urban, urban-fringe, and rural-hub/fringe schools compared to rural-remote areas. Considering that high turnover is concentrated in rural-remote schools, increasing salaries may be an effective tool to retain teachers. However, it may need to be combined with other strategies to improve working conditions in these schools. This study was not able to examine the connection between turnover and financial incentives (other than salaries) for educators. This is a potential direction for future research. Some district leaders reported providing additional pay for additional roles or providing tuition reimbursement in an effort to retain key educators. Alaska may want to review legislative efforts in other states to support and fund financial incentives (Aragon, 2018).

Non-financial incentives include other strategies to improve working conditions in rural-remote schools that are actionable by state education leaders in a way that certain living conditions in Alaska communities, such as the weather, are not. This includes making resource and policy decisions that could positively influence educator retention. Reallocating resources to targeted schools to alleviate conditions that are related to turnover (a financial incentive to schools and/or districts)—for example, reducing the need for teachers to hold multiple positions in a school or to teach at multiple sites (a non-financial incentive to teachers)—may help mitigate turnover.

Interviewees also mentioned providing opportunities for professional connections among educators within and across schools and districts in more isolated areas to help reduce feelings of professional and social isolation. Interviewees suggested applying for grants with other school districts to provide joint professional development and facilitate cross-district connections as well as creating a regular forum in which educators can share ideas and strategies outside of occasional conferences.

Focus on principal support and retention

Principal and teacher turnover were linked: Schools that experienced principal turnover also had high teacher turnover. Improving working conditions for principals as well as teachers may improve both principal retention and teacher retention. National research suggests ways to increase principal retention, such as providing principals with professional learning opportunities, matching them with mentors, distributing responsibilities among district and school-based personnel, increasing autonomy, providing manageable workloads, and raising salaries (Beesley & Clark, 2015; Preston, Jakubiec, & Kooymans, 2013; Simon & Johnson, 2015).

General considerations for policy and practice

Overall, study implications may apply to other states and communities that rely on recruiting non-local educators. This includes California, Connecticut, Florida, Nevada, and Wyoming, all of which prepared fewer than 4 percent of their teacher workforce in 2013/14 (Sutcher, Darling-Hammond, & Carver-Thomas, 2016). Study findings may also be useful for the 72 percent of school districts nationwide that are classified as rural or town districts (U.S. Department of Education, n.d. c). We identified human resources and school conditions as two groups of actionable factors for stakeholders in these states, districts, and communities to consider. Specific strategies that may improve educator retention include greater support for principals, more honest and meaningful conversations during the hiring and recruitment process, and more efforts to recruit and hire homegrown educators.

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Appendix A: Data and methods

This appendix provides more detail regarding the data and methods used for this report.

Data sources

The study team analyzed staff records that the Alaska Department of Education and Early Development (DEED) provided for school years 2011/12 through 2017/18. Analyses focus on 2012/13 to 2017/18, with 2011/12 as the first base year. The dataset contained individual-teacher unique identifiers, job code assignments, prior education information, certification, salary, and experience. The research team categorized individuals as either teachers or principals depending on their job code. The teacher category includes individuals identified in the DEED staffing file as: teacher, associate teacher, correspondence teacher, head teacher, English as a Second Language teacher, supervising teacher, on-site supervising teacher, special education teacher, remedial specialist, visiting teacher, and online course facilitator teacher. The principal category includes individuals identified in the DEED staffing file as principals. In some school districts, principals may also serve as teachers; we include these individuals in both the teacher and principal samples.

The original DEED file duplicated educators if they had different job codes at the same school. The research team decided to keep each educator unique by school assignment, role (teacher or principal), and year. For example, an individual who had a job code for head teacher and English as a Second Language teacher in the same school was only retained once. If educators worked at different schools during the same year, they may be duplicated in the same year.

We merged DEED staffing data across years with the Alaska Public School dataset, a school-level dataset the research team constructed using multiple publicly available data sources. The dataset includes school-level student enrollment characteristics, school locale, and community census data. The research team also maintains a district-level superintendent dataset that uses publicly available information to track superintendents by year and district. This dataset did not have 2011/12 data available, however. For this reason, we were only able to examine superintendent turnover for 2012/13 to 2017/18. We used this dataset to construct a turnover variable for superintendents.

Outcome variable construction

The study team used DEED records to identify educator movement over time. We flagged educators for turnover if they did not return to the same school in the same role the following year. Educators who were absent from a school for a single year were marked as having turned over. Educators who returned to their school but came back as a principal were also

flagged as having turned over. (This was not a high-frequency occurrence. We counted a total of 110 incidents of educators changing role during the study period, representing less than 0.30 percent of teachers every year). We also created a binary variable for teacher turnover at the district level that indicates whether the teacher returned in the same role to any school in the same district. Similarly, we created a binary variable to flag teachers who returned the following year to any school in Alaska. The variables we used in the analysis and information on their source and construction are listed in table A1.

Table A1. Variables used in the study and source

Variables	Description
DEED staffing file (2011/12 to 2017/18)	
ATI	Teacher and principal identifier used to track teachers and principals across the dataset.
School ID	School unique identifier used to merge datasets.
District ID	District unique identifier used to merge with superintendent dataset.
Salary	Teacher and principal annual salary.
Degree	Teachers were flagged with their highest degree.
State of preparation	U.S. state or territory in which the teacher or principal was prepared. This variable was used to construct a binary variable that indicates whether the educator was prepared in Alaska.
School, district, and state tenure	Constructed by the research team by looking at the number of years a teacher or principal spent consecutively at the same school and district and in Alaska. Tenure includes the following categories: one year, two years, three to four years, and five or more years.
Alaska tenure type	Constructed by the research team. Categories include new to state, new to school but not new to state, and not new to school.
Turnover	Binary variable constructed by the research team that indicates whether the educator returned to the same school, district, or state the following year in the same role.
Turnover type	Categorical variable constructed by the research team that specifies the type of school turnover. Categories include retained in same school and role, mover within district, mover to other district, and leaver (see box 1 in the main report for full definitions).
New to district, state, or role	Binary variable constructed by the research team that indicates whether the teacher or principal was at the same school, district, or state the previous year.

Variables	Description
Alaska public dataset (2011/12 to 2017/18 unless otherwise noted)	
School free or reduced-price lunch rate	Percentage of student population that qualifies for free or reduced-priced lunch.
District student enrollment	Number of K–12 students enrolled in the district.
District enrollment of students of color	Researcher-constructed variable that describes the percentage of students who are any race except White.
District ever-English learner enrollment	Percentage of students who have ever been identified as an English learner.
District remote schools	Continuous variable that indicates the percentage of schools in the district that are in a remote location.
School locale	Researcher-constructed locale code specifically for Alaska using stakeholder input. The four codes are: urban, urban fringe, rural hub/fringe and rural remote (see box 3 in the main report for full definitions).
Broadband access	Binary indicator if the school has access to broadband data. These data came from the Alaska Broadband Audit conducted by Connect Alaska. These were only available for the 2014/15 school year.
Region	Categorical variable for five regions in Alaska that were adapted from regions developed by the Division of Community and Regional Affairs. These regions are: Interior, North, Southcentral, Southeast, and Southwest.
Superintendent dataset	
Name	Name of the current superintendent that year.
Retention flag	Researcher-constructed variable that indicates if the superintendent returned to their district or not.

We focused our analysis on turnover patterns at traditional brick-and-mortar schools; consequently, our analysis dropped educators who were at correspondence schools, boarding schools, and schools operated by the Department of Juvenile Detention. We dropped from the sample educators who were employed by a district office or were at a school without any students enrolled. Overall, these decision rules removed 1,500 teachers, 157 principals, one superintendent, 50 schools, and one district from the sample. Our final analytic sample included 58,064 teachers and 2,784 principals who worked at 494 different schools and 53 different districts across the seven years (2011/12 through 2017/18).

Access to data limited the number of years we were able to include in the study. The database we compiled from publicly available sources had missing variables in certain years that impacted the number of years we were able to include in the study. Where values were missing for a given year, we used values from a prior year, as appropriate. For example, if a marker for an off-road community was only available in 2015/16, then we used the same marker for 2016/17, as it was unlikely this status shifted in one year. We noted this in our analysis and only used this method for variables that were unlikely to change annually.

Research question 1: What were the teacher, principal, and superintendent (educator) turnover rates by year in Alaska during the 2012/13 to 2017/18 school years?

To address research question 1, we calculated teacher, principal, and superintendent turnover rates for each available year. This rate is the percentage of educators who left their school, district, or role compared to the prior year in that school, district, or role.

Research question 2: What community, school, educator, and student characteristics are associated with educator turnover?

To understand how educator, school, and district characteristics are related to the likelihood of teacher and principal turnover at the school level, we used a logistic regression analysis to measure the log odds of not returning to the same school the following year for a teacher or principal in a given year. The research team wanted to understand how educator characteristics were related to turnover and how the relationship changed when accounting for school, district, and community characteristics. The following formula represents the full model:

$$\Pr(\text{Turnover})_{it} = \beta_0 + \lambda \text{EDU}_{it} + \xi \text{SCHOOL}_{st} + \beta \text{DISTRICT}_{dt} + \omega \text{COMMUNITY}_c$$

where the probability of educator turnover at the individual level (for teachers and principals separately) in a specific year is predicted by a vector of educator characteristics (EDU) at the individual educator level, school characteristics (SCHOOL), district characteristics (DISTRICT), and community characteristics (COMMUNITY). Table C1 in appendix C shows the full results for teacher turnover and principal turnover, respectively.

In addition, to better understand the characteristics associated with turnover, we employed a mixed-methods approach to gather qualitative data from a select group of districts. First, to identify districts that had better- and worse-than-predicted teacher turnover rates, we used regression analysis to estimate a district's predicted year-to-year turnover rate while taking into consideration district and community characteristics that are beyond a district's

control and related to turnover. With only 53 districts in our sample, it limited the number of independent variables we could employ. The variables included in the regression analysis are listed below (table A2).

Table A2. Variables used in the regression model

Variable	Variable construction
District enrollment of students who qualify for free or reduced-price lunch	A continuous variable that indicates the percentage of students who qualify for free or reduced-price lunch in the district.
District enrollment of students of color	A continuous variable that indicates the percentage of students who are any race except White.
District ever-English learner enrollment	A continuous variable that indicates the percentage of students who have ever been identified as an English learner.
District remote schools	Continuous variable that indicates the percentage of schools in the district that are located in a rural-remote community that is off the road system.
District student enrollment	Number of students enrolled in the district. Because the distribution of enrollment is heavily skewed to a few large districts, this variable was transformed to natural log to help acquire a more normal distribution.
Region	Categorical variable for five regions in Alaska that were adapted from regions developed by the division of community and regional affairs. These regions are: Interior, North, Southcentral, Southeast, and Southwest.

We took two similar approaches when conducting this analysis. In our first approach, we ran separate ordinary least squares regressions for each year for which we had turnover data (2012/13 to 2017/18). In our second approach, we used a panel regression and accounted for district random effects. Analyzing the districts identified by year using separate approaches increased our confidence in the selection process.

Both models calculated a predicted turnover rate for each district and year. We calculated residuals (differences between predicted and actual turnover rate) for each district by subtracting a district's predicted score with its actual turnover rate for the respective year. Districts that had negative residuals had a lower turnover rate than the model predicted, and schools that had positive residuals had turnover rates above the model's prediction. We developed a 95 percent confidence interval for each school using the formula:

$$95 \text{ percent confidence interval} = \text{District Residual} \pm (\text{Residual Standard Error} \times 1.96)$$

Constructing the confidence interval allowed us to determine whether a school's residual was statistically different from zero. Schools that had negative residuals and whose confidence interval did not include zero were flagged as having better-than-predicted retention. Schools that had positive residuals and whose confidence interval did not include zero were flagged as having higher turnover than predicted. We repeated this analysis for every year of data available to analyze which districts were consistently being identified.

In addition to flagging districts that were identified consistently, part of the decisionmaking process was to identify districts that represented a range of sizes. Our initial analysis only identified small- and medium-sized districts; consequently, we conducted the same analysis and restricted it to districts with enrollment in the largest two quartiles. Finally, we identified districts that did not demonstrate better-than-predicted retention. For interviews, we selected districts that both did and did not demonstrate better-than-predicted retention. In four districts, we interviewed the superintendent; in the other four, we interviewed a superintendent designee (three human resources officer and a teacher leader). A summary of the selected districts with better-than-predicted retention is provided in table A3. Nine districts were targeted for an interview. One targeted district declined our invitation to be interviewed.

Table A3. Districts identified as having better-than-predicted retention rates

District number	Number of years identified by analysis as having better-than-predicted retention rates		Tenure of current superintendent (years)	Interviewed
	OLS by year	Panel regression		
1	3	3	3–4	N
2	3	3	5–6	Y
3	4	2	1–2	Y
4	3	3	5–6	Y
5	2	3	3–4	Y
6	2	1	1–2	Y
7 ^a	0	0	1–2	Y
8 ^a	0	0	1–2	Y
9 ^a	0	0	1–2	Y

^a Indicates this district did not have better than predicted retention.

Note: OLS refers to ordinary least squares, a regression analysis method that minimizes the sum of the squared differences between dependent and independent variables in the regression equation.

We used the following protocol in speaking with district leaders:

District Leader Retention Interview Questions

Background

The Regional Educational Laboratory (REL) Northwest is conducting an Institute of Education Sciences-funded research study to examine educator retention patterns and to identify factors that influence educator retention in Alaska.

The purpose of this interview is to understand the strategies districts are using that may improve retention efforts. We are reaching out to you as a district leader with knowledge of retention strategies in your district. This interview will take up to one hour. Participation is voluntary. We are planning to include your individual responses in our final report as part of our goal to share practices that could be of use to other districts. Any portion of the interview may be shared off the record in case there are activities or circumstances you do not wish to share. You may withdraw at any time or skip questions at no consequence or risk to you. There are no risks or costs involved. You may benefit from learning about promising practices in other districts you may want to adopt, and we may be able to provide research resources that support the work you describe doing. Meeting notes and recordings, if any, will be kept in a secure folder in the Education Northwest office accessible only to the three research team members. Please contact study lead Manuel Vazquez with any questions or concerns ([phone] or [email]).

Do you agree to participate?

- ☐ Yes
- ☐ No

Do you agree to us recording this session? The sole purpose of the recording is to validate our notes, and it will be destroyed at the end of the project.

- ☐ Yes
- ☐ No

1. Thinking beyond the characteristics of your district and location, what district programs and offerings do you think encourage teachers to stay? Please consider what is going on in your district or in districts where you have worked in the past, not what you think would work.

Probe (focusing on replicable characteristics):

- Induction program (one day, ongoing); new and incoming academy; longevity pay in salary schedule; incentives; loan forgiveness programs
- Statewide programs
- Mentoring program
- Professional development
- Leadership opportunities
- Classroom aides for new teachers
- Reduced teaching load for new teachers
- Collaborative planning time
- Broadband access, cable
- Stipends for additional school responsibilities (e.g., coaching, clubs)
- Opportunities to engage with the community

2. What benefits do you offer your teachers?

Probe:

- Are salaries competitive? How recently have they been negotiated? How did you afford raises? Signing bonus?
- Personal/sick leave
- Health/life insurance (employer-paid?)
- Free/subsidized housing
- Travel (e.g., to Anchorage)
- Moving expenses
- Snow machine usage
- Paying for graduate credits/schooling

3. Are there bonuses or other incentives for teachers who stay? For teachers who announce their intention to stay or leave in advance? How do you budget for retention incentives?
4. Do you have a sense of which benefits or offerings influence teachers' decisions to stay or leave? How do you know?
 - Are there related data collection efforts?

5. In what subject/certification areas or grade ranges do you have difficulty retaining teachers? What has been successful in mitigating that? Are there bonuses in specific areas?

Probe:

- General education
 - Special education
 - English language arts
 - Social studies
 - Computer science
 - Mathematics
 - Biology or life sciences
 - Physical sciences (chemistry, physics, earth sciences)
 - English as a Second Language
 - Foreign languages
 - Music
 - Art
 - Career and technical education
 - Early childhood education
6. Besides what you have raised so far, what do you think influences a teacher's decision to stay or leave in your district?
7. What would you like to change that you believe would improve retention in your district?
8. How could districts work together to improve teacher retention regionally or statewide?
9. Anything else you would like to add?

Probe:

- What advice do you have for a new superintendent/district leader in a district similar to yours about retention?
- Do you have teachers who moved to your district from a similar district or left for a similar district? What was their motivation?

Thank you for your participation!

To conduct interview data analysis, we used the following steps (adapted from Creswell, 2014).

1. We saved interview minutes and recordings for each district in one electronic file each, which we stored in a secure folder.
2. We discussed the information from each interview shortly after the interview informally to check for understanding, surface possible key themes, and identify expected and surprising findings.
3. We read all the files to obtain a mental picture of the overall information collected and to reflect on it.
4. We coded the data as described below. Creswell (2014) defines coding as “the process of organizing the data by bracketing chunks (or text or image segments) and writing a word representing a category in the margins” (p. 247).
 - a. We hand-coded the data because our qualitative database was small and did not warrant the use of software.
 - b. We coded the data based on interview minutes, which were organized in questions, each of which represented a topic. Thus, each file was organized in a very similar manner and with ready-made labels derived from the question (with some differences due to an interviewee deviating from the question asked). We coded interviews in the order in which we conducted them.
 - c. After reviewing the first three interviews, we refined the list of topics, clustered them into similar ones, and drafted category names.
 - d. We coded the remaining interviews and added or modified topics and categories as appropriate. We did not abbreviate the topics as codes because it did not seem helpful with the relatively small numbers at hand.
5. We used the coding process to generate a description of the strategies the interviewed districts employ to recruit and retain teachers. While our interest is in retention, recruitment appeared as one retention strategy. We also described relevant characteristics of the districts as well as opportunities and challenges, and we identified those strategies that were in use in better-than-predicted retention districts only, lower-than-predicted retention districts only, and both.
6. We organized the information around our categories and ordered those into a compelling, logical narrative that highlights the connections among the categories.
7. We returned to individual district files to select key quotations and additional detail on strategies.
8. We reviewed the narrative and opted to highlight key interview findings that support the quantitative findings. We also summarized strategies in use in better-than expected retention districts only for inclusion in the implications section of the report. The complete narrative is included in appendix C.

Research question 3: What is the relationship between superintendent and principal turnover and teacher turnover?

An additional area of interest was to better understand how leadership change is related to the likelihood of educator turnover at lower levels. To understand how a principal's departure is related to teacher turnover in the same year and previous years, we constructed a set of binary variables that indicated principal departure.

- **Principal same year:** Indicates whether a teacher is at a school where the current principal did not return the following year.
- **Principal previous year:** Indicates whether a teacher is at a school where the principal from the previous year did not return to the same school.

Similarly, we constructed a set of binary variables that indicate superintendent departure.

- **Superintendent same year:** Indicates whether an educator is at a school where the superintendent from the current year did not return to the same district the following year.
- **Superintendent previous year:** Indicates whether an educator is at a school where the superintendent from the previous year did not return to the same district in the current year.

We added each one of these binary variables to the full model to estimate how leadership departure affects the likelihood of an educator returning to the same school. Table C1 in appendix C reports the results of the regression.

Limitations

This is a descriptive study. It was meant to provide a specific group of Alaska stakeholders with supplementary descriptive information to increase their understanding of turnover and retention in the state and to help them identify next steps, including prioritization of future research questions and new data collection. This study explored patterns and trends as well as relationships among variables; it was not designed to support causal inferences.

In addition, the authors limited the scope of the study to questions for which data were readily available. Consequently, the study did not address recruitment, which is a key area of concern for stakeholders. It also did not address the demographics of educators, how they compared to those of students, and whether it is more difficult to retain teachers with certain demographic characteristics (e.g., non-White and non-Alaska Native teachers or younger teachers), as our data did not include these characteristics.

Appendix B: Additional results

This appendix provides additional tables and figures with results cited in the body of the text.

Table B1. Educator turnover and retention by year, in percentages

Educator	Turnover type	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	Average
Teacher	Retained	79	79	78	76	79	78	78
	Mover-same district	6	7	7	7	7	7	7
	Mover-other district	2	2	2	2	2	2	2
	Leaver	13	13	13	15	12	13	13
Principal	Retained	76	72	71	67	77	75	73
	Mover-same district	5	6	5	6	4	5	5
	Mover-other district	2	3	4	2	3	3	3
	Leaver	17	19	21	25	17	17	19
Superintendent	Retained	NA	75	60	81	77	75	74
	Mover-other district	NA	8	4	6	4	6	5
	Leaver	NA	17	36	13	19	19	21

NA is not available, because superintendent dataset did not include information for the 2011/12 school year.

Note: The school year listed indicates the follow-up year. For example, the percentage listed for the 2017/18 school year indicates the percentage of educators from 2016/17 who did not return to the same school/district in the same role in 2017/18.

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Table B2. Number of teachers, principals, and students over time and by locale

Educator	Group	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Teachers	Overall (Unduplicated)	8,038	7,819	7,918	7,741	7,576	7,718	7,642
Principals		374	367	364	367	349	371	386
Superintendents		NA	53	53	53	53	53	53
Teacher	Overall (Duplicated)	8,611	8,272	8,479	8,261	8,172	8,168	8,101
Principals		396	392	394	396	375	406	425
Teacher	Urban	4,410	4,190	4,237	4,095	4,009	4,101	4,050
	Urban fringe	1,926	1,812	1,939	1,932	2,041	1,974	1,967
	Rural hub/fringe	1,016	1,021	1,033	1,007	952	949	981
	Rural remote	1,259	1,249	1,270	1,227	1,170	1,144	1,103
Principal	Urban	131	131	131	128	124	132	136
	Urban fringe	86	87	86	84	83	89	94
	Rural hub/fringe	72	71	68	67	69	71	73
	Rural remote	107	103	109	117	99	114	122
Superintendent	Urban	NA	3	3	3	3	3	3
	Urban fringe	NA	9	9	9	9	9	9
	Rural hub/fringe	NA	17	17	17	17	17	17
	Rural remote	NA	24	24	24	24	24	24

Educator	Group	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Percentage of teachers with more than one position	Overall	13	13	13	13	11	16	18
	Urban	10	9	10	9	7	19	21
	Urban fringe	10	10	9	10	9	8	10
	Rural hub/fringe	19	18	18	19	16	15	15
	Rural remote	24	26	27	23	25	19	19
Number of students in Alaska	Overall	117,388	117,154	116,230	116,348	116,917	116,752	115,888
	Urban	65,891	66,015	64,851	64,588	64,606	64,307	63,262
	Urban fringe	28,880	28,543	28,713	28,836	29,402	29,514	29,676
	Rural hub/fringe	10,371	10,369	10,361	10,353	10,355	10,347	10,358
	Rural remote	12,246	12,227	12,305	12,571	12,554	12,584	12,592

NA is not available, because superintendent dataset did not include information for the 2011/12 school year.

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Table B3. Average turnover and retention rates for teachers and turnover by year, 2012/13–2017/18

Category	Level	Number of teachers across years	Average retention and turnover rates by category (percent)					Turnover rate (percent)					
			Retained	Mover-same district	Mover-different district	Leaver	Turnover	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Salary	Lowest earners	12,592	71	9	3	17	29	26	28	30	32	28	28
	Second quartile	12,449	78	8	2	12	22	22	20	21	24	22	23
	Third quartile	12,620	82	6	1	10	18	17	15	19	20	17	18
	Highest earners	12,302	81	5	1	14	19	18	20	19	22	18	19
Salary in not rural-remote schools	Lowest earners	9,927	74	10	2	15	26	24	24	28	29	25	26
	Second quartile	10,778	80	8	1	11	20	20	18	19	22	19	20
	Third quartile	11,104	84	6	1	9	16	15	13	16	18	15	16
	Highest earners	10,835	82	5	0	13	18	16	18	17	21	17	17
Salary at rural-remote schools	Lowest earners	2,665	61	6	7	25	39	33	40	41	39	39	38
	Second quartile	1,671	63	6	8	24	37	38	33	36	38	39	39
	Third quartile	1,516	67	7	5	21	33	33	29	38	36	31	30
	Highest earners	1,467	68	8	5	20	32	29	31	34	31	34	36
Educated in Alaska	Received last degree outside of Alaska	28,912	76	7	2	15	24	23	22	24	26	24	23
	Received last degree in Alaska	19,202	82	7	1	10	18	17	17	19	21	17	19

Category	Level	Number of teachers across years	Average retention and turnover rates by category (percent)					Turnover rate (percent)					
			Retained	Mover-same district	Mover-different district	Leaver	Turnover	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Educated in a Northwest state	Other state	22,349	75	7	2	16	25	24	23	26	28	25	25
	Alaska	19,202	82	7	1	10	18	17	17	19	21	17	19
	Idaho	1,006	78	6	2	13	22	23	23	15	20	27	25
	Montana	1,913	79	7	2	13	21	23	22	22	24	17	22
	Oregon	2,462	76	7	2	15	24	21	24	24	30	26	21
	Washington	3,031	79	6	2	13	21	21	17	24	23	20	19
Highest degree earned	No degree	200	77	a	a	18	23	16	25	34	21	19	21
	Associate's	69	77	a	a	18	23	a	a	a	a	a	a
	Bachelor's	27,869	78	7	2	13	22	20	20	22	24	21	22
	Master's	21,587	78	7	2	13	22	22	21	23	25	21	22
	Education specialist	54	73	a	a	25	27	a	a	a	a	a	a
	Doctorate	184	68	a	a	21	32	29	42	36	14	26	42
New to state or school	More than one year at current school	32,621	81	5	1	12	19	0	18	19	22	16	18
	New to school, not new to Alaska	3,520	65	19	4	13	35	0	35	33	36	38	34
	New to Alaska	5,211	65	9	4	22	35	0	34	36	33	37	37

Category	Level	Number of teachers across years	Average retention and turnover rates by category (percent)					Turnover rate (percent)					
			Retained	Mover-same district	Mover-different district	Leaver	Turnover	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
School-level percentage of students eligible for free or reduced-price lunch (FRPL)	Less than 25%	7,254	83	a	a	11	17	16	14	15	22	15	17
	25-49%	19,526	81	6	1	11	19	18	17	19	21	18	19
	50-74%	9,947	78	8	2	13	22	20	21	24	24	22	21
	75-100%	10,316	69	8	4	19	31	30	32	32	32	31	30
School-level percentage of students of color	Less than 25%	6,381	80	7	1	11	20	18	18	20	24	20	19
	25-49%	18,511	81	7	1	11	19	19	16	18	21	18	18
	50-74%	10,658	81	7	1	11	19	18	18	20	21	19	19
	75% or more	14,413	71	7	4	18	29	26	29	30	31	28	30
School size (the number of students enrolled at a school)	Smallest (fewer than 25 students)	1,038	53	18	7	22	47	50	43	48	42	52	49
	Small (25-49 students)	1,201	65	10	6	19	35	36	31	32	36	39	34
	Medium small (50-100 students)	3,047	69	7	5	19	31	32	30	29	34	30	33
	Medium (100-199 students)	6,618	75	5	4	17	25	24	25	27	28	25	24
	Medium large (200-399 students)	15,547	78	7	1	13	22	20	20	22	24	20	22
	Large (400 or more students)	22,512	82	6	1	11	18	17	17	18	21	17	18

Category	Level	Number of teachers across years	Average retention and turnover rates by category (percent)					Turnover rate (percent)					
			Retained	Mover-same district	Mover-different district	Leaver	Turnover	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Broadband availability	No	8,159	66	6	6	22	34	33	33	35	35	35	34
	Yes	41,804	80	7	1	12	20	19	18	20	22	19	20
Locale type	Urban (on and off road)	25,042	81	a	a	11	19	17	18	19	22	16	20
	Urban fringe (on and off road)	11,624	81	7	1	12	19	21	16	19	21	22	16
	Rural hub/fringe (on and off road)	5,978	76	6	3	15	24	23	24	23	26	24	26
	Rural remote (off road)	7,319	64	6	6	23	36	33	35	38	37	36	36
Alaska region	Southeast	5,372	80	5	2	13	20	18	21	20	22	18	21
	Southcentral	29,824	81	8	1	11	19	19	16	20	23	20	19
	Southwest	4,931	68	5	6	21	32	28	31	31	33	33	34
	Interior	6,496	78	7	2	13	22	20	25	20	23	19	24
	North	3,340	67	4	6	23	33	31	33	37	34	30	32
Superintendent turnover	Superintendent did not turn over	27,968	78	7	2	14	22	NA	22	21	24	22	22
	Superintendent turned over	13,384	76	7	4	14	24	NA	20	26	33	21	22

Category	Level	Number of teachers across years	Average retention and turnover rates by category (percent)					Turnover rate (percent)					
			Retained	Mover-same district	Mover-different district	Leaver	Turnover	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Superintendent turnover - one year	Superintendent from last year stayed at school	21,188	77	7	2	14	23	NA	NA	23	24	21	24
	Superintendent from last year turned over	11,892	75	7	3	15	25	NA	NA	22	26	32	21
Superintendent turnover - two year	Superintendent from two years ago stayed	17,314	78	7	2	13	22	NA	NA	NA	25	21	21
	Superintendent from two years ago turned over	7,287	73	7	4	16	27	NA	NA	NA	24	22	35
Principal turnover	Principal did not turn over	39,069	79	7	2	13	21	21	19	21	24	21	21
	Principal turned over at that school	10,894	75	7	3	15	25	20	25	27	26	25	26
Principal turnover - one year	Principal from previous year stayed	32,232	78	7	2	13	22	NA	20	22	24	21	21
	Principal turned over last year	9,018	76	7	3	14	24	NA	22	24	26	21	27

Category	Level	Number of teachers across years	Average retention and turnover rates by category (percent)					Turnover rate (percent)					
			Retained	Mover-same district	Mover-different district	Leaver	Turnover	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Principal turnover - two year	Same principal from two years ago	25,503	78	7	2	13	22	NA	NA	22	24	21	22
	Principal turned over two years ago	7,405	76	7	3	15	24	NA	NA	23	26	24	22

a. Data masked due to small sample size.

NA is not available, because superintendent dataset did not include information for the 2011/12 school year.

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Table B4. Average turnover and retention rates for principals and turnover by year, 2012/13–2017/18

Category	Level	Number of teachers across years	Average retention and turnover rates by category (percent)					Turnover for year (percent)					
			Retained	Mover-same district	Mover-different district	Leaver	Turnover	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Salary	Lowest earners	600	67	7	6	21	33	26	37	36	43	29	27
	Second quartile	595	76	6	2	16	24	26	25	23	33	18	16
	Third quartile	614	75	4	2	19	25	22	24	27	27	24	29
	Highest earners	550	73	4	2	21	27	22	28	32	30	22	28
Educated in Alaska	Prepared outside Alaska	947	67	5	4	24	33	29	34	37	39	29	34
	Prepared in Alaska	1,194	76	5	2	17	24	21	24	25	32	20	21
Educated in a Northwest state	Other state	905	71	5	3	21	29	25	30	34	33	25	29
	Alaska	1,194	76	5	2	17	24	21	24	25	32	20	21
	Idaho	63	68	a	a	21	32	a	a	a	a	a	a
	Montana	64	67	a	a	24	33	31	54	27	20	40	a
	Oregon	66	56	a	a	34	44	47	42	40	a	a	45
	Washington	67	69	a	a	22	31	18	18	50	36	33	30
Highest degree	Bachelor's	254	76	a	a	13	24	19	24	26	38	13	26
	Master's	2,012	73	5	3	20	27	24	28	28	33	24	24
	Education specialist	a	a	a	a	a	a	a	a	a	a	a	a
	Doctorate	65	52	a	a	32	48	44	50	a	a	13	33
New to state	More than one year at current school	1,408	73	5	3	19	27	a	30	30	31	23	23
	New to school, not new to Alaska	146	74	a	a	19	26	a	11	28	53	20	19
	New to Alaska	409	71	6	3	21	29	a	26	30	35	22	33

Category	Level	Number of teachers across years	Average retention and turnover rates by category (percent)					Turnover for year (percent)					
			Retained	Mover-same district	Mover-different district	Leaver	Turnover	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
School-level percentage of students eligible for free or reduced-price lunch (FRPL)	Less than 25%	225	78	a	a	17	22	24	24	11	31	22	19
	25–49%	734	78	a	a	16	22	16	23	25	29	16	23
	50–74%	489	70	6	3	21	30	26	34	30	36	28	25
	75–100%	681	68	5	5	22	32	28	35	37	35	27	29
School-level percentage of students of color	Less than 25%	312	77	a	a	17	23	11	27	27	36	24	15
	25–49%	699	79	a	a	17	21	19	18	21	33	16	19
	50–74%	401	74	7	3	17	26	28	31	27	27	16	26
	75–100%	947	66	5	5	23	34	32	36	38	35	30	31
School size (the number of students enrolled at a school)	Smallest (less than 25 students)	174	55	13	6	27	45	50	35	55	57	31	45
	Small (25–49 students)	155	67	a	a	24	33	33	38	38	45	10	31
	Medium small (50–100)	285	64	6	4	25	36	27	39	47	45	32	26
	Medium (100–199 students)	460	70	4	5	21	30	20	38	25	33	27	39
	Medium large (200–399 students)	694	77	4	2	17	23	29	24	23	25	23	15
	Large (400 or more students)	591	82	a	a	13	18	12	16	20	28	16	18
Broadband availability	No	683	63	6	6	25	37	33	40	42	39	33	38
	Yes	1,676	77	5	1	17	23	21	24	25	31	19	20

Category	Level	Number of teachers across years	Average retention and turnover rates by category (percent)					Turnover for year (percent)					
			Retained	Mover-same district	Mover-different district	Leaver	Turnover	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Locale type	Urban (on and off road)	777	81	a	a	14	19	21	21	18	23	20	12
	Urban fringe (on and off road)	515	79	a	a	15	21	16	22	22	32	14	21
	Rural hub/fringe (on and off road)	418	67	4	5	24	33	26	31	41	45	22	31
	Rural remote (off road)	649	62	6	6	26	38	33	42	42	39	34	39
Alaska region	Southeast	290	71	4	5	21	29	29	31	41	35	20	19
	Southcentral	1,095	80	a	a	15	20	16	23	15	30	18	20
	Southwest	460	64	6	7	23	36	37	32	42	33	36	38
	Interior	295	70	a	a	22	30	30	25	40	41	21	21
	North	219	64	a	a	28	36	21	45	47	40	25	37
Superintendent turnover	Superintendent did not turn over	1,371	73	5	3	19	27	NA	32	25	32	23	23
	Superintendent turned over	592	68	4	4	24	32	NA	24	39	43	23	32
Superintendent turnover - 1 year	Superintendent from last year stayed at school	1,053	71	5	3	21	29	NA	NA	33	33	21	30
	Superintendent from last year turned over	518	70	5	3	21	30	NA	NA	26	35	42	18

Category	Level	Number of teachers across years	Average retention and turnover rates by category (percent)					Turnover for year (percent)					
			Retained	Mover-same district	Mover-different district	Leaver	Turnover	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Superintendent turnover - 2 year	Superintendent from two years ago stayed	828	72	6	2	20	28	NA	NA	NA	37	23	24
	Superintendent from two years ago turned over	349	71	4	4	20	29	NA	NA	NA	29	23	34

a. Data masked due to small sample size.

NA is not available, because superintendent dataset did not include information for the 2011/12 school year.

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Table B5. Mobility patterns among teachers who moved across districts, years 2012/13 to 2017/18

Locale origin	Locale next year	Teachers	
		Number	Percent
Urban (on and off road)	Urban	16	19
	Urban fringe	44	43
	Rural hub/fringe	19	21
	Rural remote	15	17
Urban fringe (on and off road)	Urban	33	38
	Urban fringe	16	19
	Rural hub/fringe	16	19
	Rural remote	21	23
Rural hub/fringe (on and off road)	Urban	34	20
	Urban fringe	41	25
	Rural hub/fringe	42	24
	Rural remote	52	31
Rural remote (off road)	Urban	62	14
	Urban fringe	73	17
	Rural hub/fringe	129	31
	Rural remote	158	37

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Table B6. Average teacher salary and number of years in position during the 2017/18 school year, overall and by locale

Indicator	Group	Number	Mean	Standard deviation	Median	Min.	Max.
Median salary for person in each year and role (in dollars)	Overall	8,101	69,062	13,863	69,379	6,001	114,163
	Urban (on and off road)	4,050	69,686	14,294	70,947	6,120	103,507
	Urban fringe (on and off road)	1,967	68,871	12,778	69,379	9,991	108,214
	Rural hub/fringe (on and off road)	981	68,544	14,464	68,852	6,001	113,000
	Rural remote (off road)	1,103	67,569	13,438	66,852	11,062	114,163
Tenure in school starting from 2012 (number of years)	Overall	8,101	4	2	4	1	7
	Urban (on and off road)	4,050	5	2	5	1	7
	Urban fringe (on and off road)	1,967	5	2	5	1	7
	Rural hub/fringe (on and off road)	981	4	2	4	1	7
	Rural remote (off road)	1,103	3	2	3	1	7
Tenure in district starting from 2012 (number of years)	Overall	8,101	5	2	6	1	7
	Urban (on and off road)	4,050	5	2	7	1	7
	Urban fringe (on and off road)	1,967	5	2	6	1	7
	Rural hub/fringe (on and off road)	981	4	2	5	1	7
	Rural remote (off road)	1,103	3	2	3	1	7
Tenure in Alaska starting from 2012 (number of years)	Overall	8,101	5	2	7	1	7
	Urban (on and off road)	4,050	5	2	7	1	7
	Urban fringe (on and off road)	1,967	5	2	7	1	7
	Rural hub/fringe (on and off road)	981	5	2	6	1	7
	Rural remote (off road)	1,103	4	2	3	1	7

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Table B7. Characteristics of teachers during the 2017/18 school year, overall and by locale

Indicator	Group	Number	Percent of all teachers
New to school, but not new to Alaska K–12 system	Overall	750	9
	Urban (on and off road)	368	9
	Urban fringe (on and off road)	146	7
	Rural hub/fringe (on and off road)	121	12
	Rural remote (off road)	115	10
New to school and Alaska K–12 system	Overall	983	12
	Urban (on and off road)	400	10
	Urban fringe (on and off road)	166	8
	Rural hub/fringe (on and off road)	158	16
	Rural remote (off road)	259	23
Prepared in Alaska	Overall	3,168	42
	Urban (on and off road)	2,021	53
	Urban fringe (on and off road)	681	37
	Rural hub/fringe (on and off road)	255	29
	Rural remote (off road)	211	24
Held more than one position at the same school	Overall	1,479	18
	Urban (on and off road)	896	22
	Urban fringe (on and off road)	207	11
	Rural hub/fringe (on and off road)	146	15
	Rural remote (off road)	230	21
Worked at one or more schools	Overall	741	9
	Urban (on and off road)	372	9
	Urban fringe (on and off road)	135	7
	Rural hub/fringe (on and off road)	198	20
	Rural remote (off road)	36	3

Indicator	Group	Number	Percent of all teachers
Highest degree is bachelor's	Overall	4,244	52
	Urban (on and off road)	2,062	51
	Urban fringe (on and off road)	1,008	51
	Rural hub/fringe (on and off road)	538	55
	Rural remote (off road)	636	58
Highest degree is master's	Overall	3,761	46
	Urban (on and off road)	1,964	48
	Urban fringe (on and off road)	939	48
	Rural hub/fringe (on and off road)	427	44
	Rural remote (off road)	431	39

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Table B8. Average principal salary and number of years in position during the 2017/18 school year, overall and by locale

Indicator	Group	Number	Mean	Standard deviation	Median	Min.	Max.
Median salary for person in each year and role	Overall	425	106,691	11,937	107,245	62,674	136,728
	Urban (on and off road)	136	111,379	8,498	111,577	92,611	128,866
	Urban fringe (on and off road)	94	106,164	10,860	106,500	64,599	125,220
	Rural hub/fringe (on and off road)	73	100,572	14,272	99,083	68,802	136,728
	Rural remote (off road)	122	105,533	12,570	107,669	62,674	130,554
Tenure in school starting from 2012 (number of years)	Overall	425	3	2	3	1	7
	Urban (on and off road)	136	4	2	4	1	7
	Urban fringe (on and off road)	94	4	2	3	1	7
	Rural hub/fringe (on and off road)	73	3	2	3	1	7
	Rural remote (off road)	122	3	2	2	1	7
Tenure in district starting from 2012 (number of years)	Overall	425	4	2	3	1	7
	Urban (on and off road)	136	5	2	5	1	7
	Urban fringe (on and off road)	94	4	2	4	1	7
	Rural hub/fringe (on and off road)	73	3	2	3	1	7
	Rural remote (off road)	122	3	2	2	1	7
Tenure in Alaska starting from 2012 (number of years)	Overall	425	4	2	4	1	7
	Urban (on and off road)	136	5	2	5	1	7
	Urban fringe (on and off road)	94	4	2	4	1	7
	Rural hub/fringe (on and off road)	73	3	2	3	1	7
	Rural remote (off road)	122	3	2	2	1	7

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Table B9. Characteristics of principals during the 2017/18 school year, overall and by locale

Indicator	Group	Number	Percent of all principals
New to school, but not new to Alaska K–12 system	Overall	37	9
	Urban (on and off road)	a	a
	Urban fringe (on and off road)	a	a
	Rural hub/fringe (on and off road)	a	a
	Rural remote (off road)	15	12
New to school and Alaska K–12 system	Overall	84	20
	Urban (on and off road)	12	9
	Urban fringe (on and off road)	16	17
	Rural hub/fringe (on and off road)	18	25
	Rural remote (off road)	38	31
Prepared in Alaska	Overall	210	57
	Urban (on and off road)	83	73
	Urban fringe (on and off road)	48	56
	Rural hub/fringe (on and off road)	25	38
	Rural remote (off road)	54	53
Held more than one position at the same school	Overall	20	5
	Urban (on and off road)	a	a
	Urban fringe (on and off road)	a	a
	Rural hub/fringe (on and off road)	11	15
	Rural remote (off road)	a	a
Worked at one or more school	Overall	68	16
	Urban (on and off road)	a	a
	Urban fringe (on and off road)	a	a
	Rural hub/fringe (on and off road)	25	34
	Rural remote (off road)	30	25

Indicator	Group	Number	Percent of all principals
Highest degree is bachelor's	Overall	44	10
	Urban (on and off road)	14	10
	Urban fringe (on and off road)	a	a
	Rural hub/fringe (on and off road)	a	a
	Rural remote (off road)	12	10
Highest degree is master's	Overall	362	85
	Urban (on and off road)	118	87
	Urban fringe (on and off road)	83	88
	Rural hub/fringe (on and off road)	59	81
	Rural remote (off road)	102	84

a. Data masked due to small sample size.

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

This section of the appendix presents information on the percentages of teachers and principals who were new to their school, district, or state over time (table B10) and by different educator and school characteristics (table B11).

Table B10. Percentage of educators who were new to their school, district, or state over time, 2012/13 to 2017/18

Educator	Level	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Teacher	School	18	23	20	24	21	21
	District	12	15	14	15	16	14
	State	10	14	12	13	14	12
Principal	School	24	29	30	30	29	28
	District	20	22	25	22	25	21
	State	18	20	22	20	22	18

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Table B11. Percentage of teachers and principals who were new to their school in 2017/18, by educator and school characteristics

Category	Description	Number of teachers	Percent teachers new to school	Number of principals	Percent principals new to school
Overall	Overall	8,101	21	425	28
Salary	Lowest earners	2,028	41	107	39
	Second quartile	2,052	22	108	24
	Third quartile	2,012	13	108	30
	Highest earners	2,009	10	102	19
School-level percentage of students eligible for free or reduced-price lunch (FRPL)	Less than 25%	1,019	17	36	28
	25–49%	2,995	17	115	26
	50–74%	1,199	21	67	25
	75–100%	2,213	28	148	30
School-level percentage of students of color	Less than 25%	706	22	42	21
	25–49%	3,082	16	131	22
	50–74%	1,821	19	69	26
	75% or more	2,492	29	183	34
School size (the number of students enrolled at a school)	Smallest (less than 25 students)	161	45	41	49
	Small (25–49 students)	187	41	27	37
	Medium small (50–100 students)	451	30	48	31
	Medium (100–199 students)	1,121	24	90	39
	Medium large (200–399 students)	2,541	23	117	17
	Large (400 or more students)	3,640	17	102	19
Locale type	Urban (on and off road)	4,050	19	136	15
	Urban fringe (on and off road)	1,967	16	94	24
	Rural hub/fringe (on and off road)	981	28	73	33
	Rural remote (off road)	1,103	34	122	42

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Appendix C. Regression results

Table C1. Relationship among teacher, school, and district characteristics and teacher and leadership turnover, 2012/13–2016/17 followed to the next year

	Model 1 - Teachers		Model 2- Principals	
	Odds ratio	Standard error	Odds ratio	Standard error
Salary (\$1,000 increments)	0.987***	0.001	1.003	0.007
Alaska educated	0.798***	0.028	0.628**	0.103
Worked at multiple schools	2.325***	0.131	1.534	0.491
Master's degree or higher	1.203***	0.041	1.321	0.354
More than one position at the school	1.136**	0.054	0.955	0.322
Tenure (two or more years at same school is reference category)				
New to current school, not new to state	1.655***	0.098	0.842	0.267
New to current school and new to state	1.496***	0.088	0.802	0.187
Year				
2014/15	1.236***	0.061	1.462	0.323
2015/16	1.032	0.059	0.817	0.211
2016/17	1.169*	0.072	1.003	0.264
School-level characteristics				
School-level percentage of students eligible for free or reduced-price lunch (FRPL)				
(25% or less is reference)				
25-49%	1.063	0.057	0.948	0.290
50-74%	1.157*	0.079	1.081	0.390
75-100%	1.357***	0.111	0.961	0.393

	Model 1 - Teachers		Model 2 - Principals	
	Odds ratio	Standard error	Odds ratio	Standard error
School-level percentage of students of color (25% or less is reference)				
25-49%	1.193**	0.074	0.782	0.233
50-74%	1.191*	0.083	0.772	0.263
75-100%	1.202*	0.102	0.690	0.280
School-level percentage of ever English learners	1.001	0.001	1.005	0.005
School in a rural-remote area	1.304**	0.116	1.425	0.477
School level (elementary is reference)				
K-12	0.991	0.078	0.904	0.274
Middle or high school	0.943	0.038	1.167	0.254
School enrollment (logged)	0.886***	0.025	0.887	0.117
District and community characteristics				
Alaska region (Southeast is reference)				
Southcentral	1.171*	0.073	0.903	0.268
Southwest	1.188	0.120	0.887	0.334
Interior	1.311***	0.094	1.934*	0.648
North	1.415***	0.139	1.201	0.478
District-level percentage of students eligible for free or reduced-price lunch (FRPL) (25% or less is reference)				
25-49%	1.253	0.277	0.947	0.955
50-74%	1.300	0.295	1.910	1.968
75-100%	1.270	0.286	1.584	1.623

	Model 1 - Teachers		Model 2- Principals	
	Odds ratio	Standard error	Odds ratio	Standard error
Leadership factors				
Principal from same year did not return	1.164***	0.042		
Principal from previous year did not return	1.047	0.038		
Superintendent from same year did not return	1.030	0.041	1.330	0.238
Superintendent from previous year did not return to the same school	0.994	0.035	0.875	0.141
Constant	0.437**	0.118	0.433	0.530
Observations	29,699		1,272	
Number of unique observations	11,966		584	

*** p<0.001, ** p<0.01, * p<0.05.

Source: Authors' analysis of data from the Alaska Department of Education and Early Development and publicly available data.

Appendix D: Interview findings

Districts reported using multiple retention strategies, including targeted recruiting, relationship building, and listening

Eight districts shared practices they have found, anecdotally, to be successful at promoting teacher retention. In five of these districts, teacher retention rates were better than predicted considering their district and community characteristics. The other three districts did not have better-than-predicted retention (although their retention rates may have been high) and were included to determine whether the two groups of districts employed similar strategies. We have focused on strategies used by districts with better-than-predicted retention, and we flagged differences that occurred across the two types of districts. Some strategies were in use in both groups of districts, suggesting that other factors may have influenced their effect on retention. This may also suggest that there are differences in how the strategies were implemented, which could explain how effective they were perceived to be.

According to district leaders, the retention incentives that seem to be both necessary and effective largely depend on the community in which the school district resides. Two of the district leaders we interviewed described their local context as a “destination” community with a range of services and social opportunities—teachers want to live, teach, and stay there, and the vast majority of teachers who leave the district voluntarily retire (one of these two districts has better-than-predicted retention rates). Leaders from two other districts (both with better-than-predicted retention) said they faced some challenges due to the small size of the community, but most teachers managed to feel at home and stayed until retirement or until they left to be closer to family. Leaders from three other districts said the main challenge they faced in retaining teachers was difficult living conditions. One of these districts still had better-than-predicted retention, and all three districts have experimented with promising practices.

Interviewees mentioned incentives that may be used in other districts but were not available to them in their current district due to lack of funding. Accordingly, they reported investing available funds carefully and looking for creative, non-monetary ways to acknowledge passionate, hard-working staff members who do what it takes to meet students’ needs.

Recruit for retention, continuously

In any district, hiring is the most important thing. To keep teachers, always make a good hire instead of a fast hire. If you go through a pool of candidates and nobody jumps out, you're better off taking a long-term sub. You need to hire with the intent of getting someone for 20 years. Some places don't do that because they are desperate to hire.

—District leader

Two communications-related themes emerged from the interviews. First, district leaders said it was essential to be candid and detailed with candidates about the situation into which they are potentially walking. They recommended discussing the situation with candidates and asking multiple times whether candidates understand potential challenges and are ready to work under the circumstances. In rural-remote districts and communities, district leaders recommended hiring locally as much as possible.

One district leader started focusing early conversations on candidates' vision and life experiences, rather than teaching experience, to determine how suited a candidate might be. They believe this has improved both recruitment and retention. Taking what might be seen as a risk, this leader often suggests that candidates look elsewhere and then decide whether to maintain their application. Many times, candidates return even though this school district is not their top choice. From the perspective of the district leader, the initial personal connection makes the difference.

District leaders felt that upon joining a school, it is important for teachers to develop and maintain a sense of belonging, and they sometimes need help making friends and developing a support group. Teachers often leave small school districts, in particular, due to feelings of isolation. Some district leaders thought that having a welcoming committee in their district helps introduce new staff members to the community. In small communities, the school is often the center of community life. This helps, but with multiple responsibilities at the school, it is easy for teachers to “make school 100 percent [of their] life” and to miss out on a variety of opportunities that might keep them engaged with the community. Two district leaders mentioned that hiring couples rather than single individuals has been a successful strategy.

Recruitment for retention is a continuous process. One district leader said the district is “constantly checking in with people, trying to attract them.”

Build trust between administrators and teachers

It's harder to find someone who fits in the community than to find teachers interested in improving. Village lifestyle requires certain personalities to do well ... If people like the lifestyle and the community likes them, gain their trust and you can get them to improve.

—District leader

According to district leaders, trust building is essential to both recruitment and retention and should begin as early as possible. A teacher may turn out to be less effective than expected, for example, yet still eager to improve and willing to remain in the community. If there is trust and, more generally, a good relationship between the teacher and the administrator, then this can be workable—an administrator may be able to help the teacher improve. Given the state's challenges with recruitment and retention, many administrators are willing to accept this scenario.

According to district leaders, a trusting relationship is also more likely to result in open communication about any challenges the teachers face. If an administrator is aware of those issues early on, then they are more likely to be able to address them. Strategies to build trust include listening to teachers, finding out why they have chosen to stay, and maintaining those conditions.

Recreate familiar living conditions

Living in rural-remote Alaska can offer a rare opportunity to make deep, meaningful connections with local communities. Careful planning and correct expectations help minimize frustration. It is important to budget for travel to and from many Alaska communities, which can be expensive and may be necessary to access some of the conveniences that many people have come to expect, such as grocery stores and hospitals. Planning includes exploring modes of transportation in areas without roads and anticipating weather delays. One district leader has made a concerted effort to mitigate those circumstances with support and flexibility. If a teacher needs to miss a day of school to go to a doctor's appointment, the teacher gets permission to do so and the district makes it work.

Support teacher growth

Budget cuts over the past several years have reduced the range of professional development opportunities some school districts offer teachers. Despite these challenges, districts have offered some professional development opportunities that they believe may have played a role in retaining teachers.

One school district had a particularly successful experience sending its entire staff on a retreat outside the community. This happened in a year in which the entire staff had turned over. The district has been looking for grant funding to repeat the experience.

Regardless of whether retention was better than expected, personalized professional learning, when feasible, was seen as a successful strategy. The type of professional learning offered varied based on budgets and staff size. One district offered “regular professional development,” paying for three credit hours a year. Another allocated funding for teachers to observe best practices in another district or assigned a substitute to a teacher’s class for a handful of hours so they could take an online course. These were seen as types of opportunities that can show teachers that the district values them. District leaders said they definitely felt this had a positive impact on retention. When personalized professional learning opportunities were not feasible, an effort to set up collaborative time was still seen as worthwhile, if feasible itself, regardless of whether retention was better than expected.

Three districts mentioned taking advantage of a statewide mentorship program when available and, anecdotally, it was critical in one teacher getting a special education endorsement. Special education is one area multiple interviewees flagged as challenging for both retention and recruitment. While mentoring sometimes happens naturally among professionals, some districts employed mentors whenever possible (again, budget being a constraint), including bringing in outside experts.

One district put in place a successful blend of mentoring and community involvement. It collaborated with local entities, bringing in local experts to provide instruction and collaborate with teachers. For example, a regional language preservation group provided language and culture instruction to students; scientists from a local college engaged students in discussions about the school’s fish tank; another group presented on the watershed and local resources and took the students on field trips. For teachers, these were opportunities to learn, connect with the community, and help students make connections between classroom learning and real-life applications. District leaders thought that all of this helped teachers feel that the district was a good place to work and live. Overall, mentoring was used in a combination of districts that may or may not have had better-than-predicted retention.

Two of the districts, one a destination district, said it offered a range of professional learning opportunities (professional development days, free online courses through a district membership in a statewide professional learning network, outside experts and colleagues as mentors, and collaborative time) but whether these strategies promoted retention was unclear to the interviewees.

Treat your teachers like the leaders they are

In Alaska, teachers often take on multiple roles. In smaller districts, it is as much a necessity to meet students' needs as it is an opportunity. Depending on a district's budget and contracts, these multiple roles may or may not come with a stipend. Some districts offered traditional leadership opportunities, such as sharing with other teachers, leading sections of inservices, participating in curriculum mapping and coding, serving as peer evaluators, or presenting at conferences. Teachers with principal endorsements were sometimes asked to serve as administrators in times of need. Teacher leadership was also used in districts with or without better-than-predicted retention. It may be important and challenging to balance teacher leadership as an opportunity and as additional work with potentially no additional pay.

One district gave teachers the opportunity to provide input on district programs and to influence the direction of the work. Administrators also asked teachers what professional development would be most relevant to them and provided a range of options to meet those needs.

Another introduced the idea of "supportive risk-taking," which they thought teachers found very empowering. This leader observed that teachers were afraid to try new or risky things for fear of repercussions. To address this, the district leader purposefully created an environment in which staff members—and students—were actively encouraged to try new things, take risks, and serve as experts in their field. For example, this district asked students what classes they would like to take and asked teachers what classes they would like to teach if there were no constraints. The district then instituted a new block schedule one day a week to offer some of the classes that were common to both lists. These nontraditional classes included net mending (a viable skill in the community), backcountry and boat cooking, yoga and mindfulness, emergency medical training, audio engineering, and Japanese. The classes integrated core skills, such as reading and writing, and soft skills.

[The district has encouraged] ...nontraditional types of classes where teachers are having fun engaging with kids differently. Wednesday attendance data are the highest ever. Students are engaged and teachers are excited to have that built into their week.

—District leader

This leader also chose to attend these classes regularly, using them as an opportunity to be visible to teachers in an unobtrusive way and to stay informed on what is happening in classrooms.

Aides and, to a lesser extent, paraprofessional support, were available to teachers in all the interviewed districts. However, only one of the smallest districts felt this was a critical factor in retention as it “would be impossible to do work without aides.”

Make up for pay that is not competitive

According to several district leaders, Alaska once had no difficulty attracting teacher candidates, due to high pay and the appeal the state held for those seeking adventure. In their perception, that is no longer the case. As one district leader put it, “Now, only the adventure is left.”

Despite this fact, several interviewees expressed the opinion that a generous contract—including a competitive benefits package—can still make a substantial difference for both recruitment and retention. District leaders expressed this view regardless of whether their district’s pay scale was deemed “pretty good,” “right around the middle,” or “in the bottom third of the state” and regardless of whether their district had better-than-predicted retention. In one destination district, which offers some of the highest salaries in the state, a competitive benefits package was seen as one of two critical factors in promoting retention beyond community characteristics; the other being small class sizes. Two districts offered free health insurance, and three others offered low copays. Still, one district leader lamented the disappearance of the defined benefit plan, which encouraged teachers to remain in one school district for a longer period of time.

Longevity bonuses were an option for some districts, but not others. Two districts offered such bonuses, another district was considering them, and another had a contract that did not allow them. The two districts that offered longevity bonuses also offered a bonus for teachers who gave their termination notice well in advance, thereby giving the district more lead time to search for a replacement if needed.

Three districts mentioned tuition reimbursement as a retention strategy. In one district, the school board allocated \$24,000 for teachers and, in some cases, reimbursed administrators for coursework they took during the year.

Several districts offer incentives for special education teachers. Special education is a particularly difficult area to fill due to high demand, and district leaders said it was almost impossible to compete for those candidates without offering such incentives. One district was also considering offering a bonus to its current special education staff members to retain them. Another district has provided its special education staff members with funding for professional certifications and has given them the flexibility to live outside the district, travel to village schools, and provide some services online.

Free or subsidized rental housing is another incentive some Alaska districts use to retain (and attract) teachers. However, none of the interviewed districts provided this benefit, and housing conditions varied greatly, with only two districts having both available and affordable housing (one of these districts owns several housing units). In five districts, housing was expensive and difficult to find. In another, housing was expensive but fairly easy to find. In two districts, the hiring committee or a welcoming committee helped new hires find housing. One district leader suggested that offering housing incentives for teachers for the first three years would boost retention, but that it was not an option within current budgets.

Seven of the eight districts offered no support for travel costs, whether for interviews, relocation, or trips after hiring. Interviewees gave several reasons for this. Some said travel from their district was easy and affordable, so reimbursement was unnecessary, while others said they could not afford to offer it. Some districts would pay the travel costs for administrator interviewees but not teacher interviewees, and only two districts helped pay for moving costs. Of the districts included in the interviews, none provided at-home Internet and cable access to their teachers as an incentive, even though both services were highly sought after in some of these communities.

Finding pockets of cross-district collaboration in a competitive environment

Using cross-district collaboration to promote educator retention is difficult in Alaska. Districts are forced to compete for available candidates, and the vast distances between districts does not make relationship building easy. Yet, there was some degree of collaboration, and district leaders shared several creative ideas for other possible collaborations in the future.

One district leader mentioned applying for grants with another school district to offer their teachers common professional development. Another benefited from sharing ideas and strategies with other district leaders at conferences and wished it was possible to have these conversations more regularly.

Other suggestions pertained to recruitment, which is relevant as a retention strategy. Two district leaders suggested keeping track of promising candidates who are not a good fit for one's own district but may be for a nearby district. Another district leader suggested taking a systematic approach to this by maintaining a "draft board" of such teacher candidates.

Three district leaders suggested collaborating on marketing and communications materials that present teaching in the state as an attractive option, describe the appealing aspects of the state's retirement system, and prepare candidates for the realities of living in rural

Alaska. This could be an extension of a practice used in one district in which staff members collaboratively identified the attributes of ideal teacher candidates and developed marketing materials to attract them.

One leader envisioned a sister-city program in which two school districts would share effective teachers who would be a good fit for both settings and would split their time between them.