

Factors related to teacher mobility and attrition in Colorado, Missouri, and South Dakota

Challenges related to teacher mobility and attrition have led educators in Colorado, Missouri, and South Dakota to seek better information about factors associated with these phenomena. In collaboration with educators in these states, the Regional Educational Laboratory Central used state administrative data for 2011/12–2016/17 to identify whether the characteristics of teachers and schools were related to the likelihood of teachers moving to a classroom teaching position in a different school (referred to as moving or being a mover) or taking a nonteaching position or leaving their state public school system (leaving or being a leaver) from 2015/16 to 2016/17 rather than remaining in a classroom teaching position in the same school (staying or being a stayer). Across the three states, teacher characteristics associated with moving or leaving included teaching assignment, years teaching in a school and district, age, and salary, and school characteristics associated with teachers' moving or leaving included a school's state accountability rating, average teacher salary, and proportion of racial/ethnic minority students.

Why this study?

Educators in Colorado, Missouri, and South Dakota partnered with the Regional Educational Laboratory Central to examine the relationship between teacher and school characteristics and the likelihood of teachers moving or leaving rather than staying in the same school from 2015/16 to 2016/17. Teacher mobility and attrition are frequently associated with challenges for students and schools, such as low student achievement and inequitable access to high-quality teachers.¹ These challenges arise because teachers often leave low-performing districts and economically disadvantaged areas, and schools and districts incur substantial financial costs to allocate additional resources for teacher recruitment and professional development.² Research has provided a basic, national-level picture of teacher mobility and attrition while suggesting that these phenomena vary substantially across regions, states, and districts.³ This study complements existing research by providing region- and state-specific information on factors related to teacher mobility and attrition.

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3. Plecki, M. L., Elfers, A. M., Loeb, H., Zahir, A., & Knapp, M. S. (2005). *Teacher retention and mobility: A look inside and across districts and schools in Washington State*. Seattle, WA: University of Washington, College of Education. Retrieved August 27, 2019, from <http://www.education.uw.edu/ctp/content/teacher-retention-and-mobility-look-inside-and-across-districts-and-schools-washington-state>; Sutchter, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* Palo Alto, CA: Learning Policy Institute. Retrieved August 27, 2019, from <https://learningpolicyinstitute.org/product/coming-crisis-teaching>.

What was studied and how?

The study addressed the following question:

- From 2015/16 to 2016/17, to what extent were characteristics of teachers, schools, and districts in Colorado, Missouri, and South Dakota related to the likelihood of teachers moving to a different school and to taking a nonteaching position or leaving their state public school system altogether?

The study used administrative data provided by state education agencies in Colorado, Missouri, and South Dakota covering all teachers during 2011/12–2016/17. The data included employment position (the professional role of an individual in a state public school system, defined as either a classroom teaching position or a nonteaching position); district, school, and classroom teaching assignments; age; salary; gender; race/ethnicity; and highest education degree attained.

The study also obtained school and district data from state education agencies and supplemented those data with data from the National Center for Education Statistics Elementary/Secondary Information System (<https://nces.ed.gov/ccd/elsi/>). These data included information about school and district locale (urban, suburban, town, or rural); school and district enrollment; school grade span; school average annual teacher salary; and school state accountability designation. For each school the data also included the proportion of students who scored proficient or better on the state English language arts assessment, the proportion of racial/ethnic minority students, the proportion of students who were eligible for the national school lunch program, and the proportion of students who were English learner students.

The study used teachers' primary assignments to districts, schools, and teaching or nonteaching positions for each year to determine their status as stayers, movers, or leavers from 2015/16 to 2016/17. For teachers with multiple assignments, the study considered the one in which they spent the most time to be the primary assignment.

The study used multinomial logistic regression models to identify teacher, school, and district characteristics related to the likelihood of teachers being movers or leavers rather than stayers. The report presents results from all models using combined data for Colorado, Missouri, and South Dakota as well as analyses conducted separately for each state.

Although the study examined district characteristics, they were excluded from the models because all district characteristics except enrollment were highly correlated with school characteristics, and district enrollment was not a significant predictor. A threshold of at least 30 percent relative risk was used to identify the characteristics that were most strongly associated with the likelihood of moving or leaving.

Findings

- **Nearly 20 percent of teachers moved from or left classroom teaching positions.** From 2015/16 to 2016/17, 8 percent of teachers in Colorado, Missouri, and South Dakota were movers, 10 percent were leavers, and 82 percent were stayers.
- **Special education teachers, teachers who had been teaching in the same school for fewer than four years, and younger teachers were more likely than teachers without these characteristics to be movers rather than stayers.** Among the teacher characteristics examined, primary subject-area assignment, years teaching in the same school, and age were most strongly associated with moving rather than staying from 2015/16 to 2016/17 (table 1). Special education teachers were 72 percent more likely to be movers than were other teachers. Teachers who had been teaching in the same school for fewer than four years were 58 percent more likely to be movers than were teachers who had been teaching in the same school for four or more years. And teachers younger than 32 were 42 percent more likely to be movers than were teachers age 49 or older.

Table 1. Teacher and school characteristics associated with the likelihood of moving or leaving rather than staying from 2015/16 to 2016/17

Association	Teacher characteristics	School characteristics
Associated with moving rather than staying	<ul style="list-style-type: none"> • Primary subject-area assignment • Years teaching in the same school • Age • Salary • Gender • Primary grade-level assignment • Highest education degree 	<ul style="list-style-type: none"> • State accountability designation • Average teacher salary • Student population • Academic performance • Grade span • Rurality
Associated with leaving rather than staying	<ul style="list-style-type: none"> • Age • Full-time equivalency • Years teaching in the same district • Salary • Primary grade-level assignment • Highest education degree • Years teaching in the same school • Primary subject-area assignment • Gender 	<ul style="list-style-type: none"> • State accountability designation • Average teacher salary • Student population • Enrollment • Rurality • Grade span • Academic performance

Note: This table includes characteristics with statistically significant and strong associations; strong associations are defined as those with 30 percent or higher relative risk. Teacher and school characteristics are ordered by strength of association within each list.

Source: Authors' analysis of state education agency data, supplemented with data from the National Center for Education Statistics Elementary/Secondary Information System.

- **Teachers in schools with a low state accountability rating and teachers in schools that paid a lower average teacher salary were more likely than teachers in schools without these characteristics to be movers rather than stayers.** Among the school characteristics examined, state accountability designation and average teacher salary were most strongly associated with moving rather than staying from 2015/16 to 2016/17 (see table 1). Teachers in schools identified for improvement by state education agencies due to low student achievement (schools with a low state accountability rating) were 49–51 percent more likely to be movers than were teachers in schools not identified for improvement. And teachers in schools that paid an average salary of less than \$41,525 were 47 percent more likely to be movers than were teachers in schools with an average salary of \$55,149 or more.
- **Older teachers, teachers who worked less than half time, teachers who had been teaching for fewer years in the same district, and teachers who earned lower salaries were more likely than teachers without these characteristics to be leavers rather than stayers.** Among the teacher characteristics examined, age, full-time equivalency, years teaching in the same district, and salary were most strongly associated with leaving rather than staying from 2015/16 to 2016/17 (see table 1). Teachers age 49 or older were 63 percent more likely to be leavers than were teachers ages 40–48. Teachers who worked less than half time were 41 percent more likely to be leavers than were teachers who worked half time or more. Teachers who had been teaching in the same district for fewer than four years were 36 percent more likely to be leavers than were teachers who had been teaching in the same district for four or more years. And teachers with lower salaries were more likely to be leavers.
- **Teachers in schools with a low state accountability rating, teachers in schools that paid a lower average teacher salary, and teachers in schools with a higher proportion of racial/ethnic minority students were more likely than teachers in schools without these characteristics to be leavers rather than stayers.** Among the school characteristics examined, state accountability designation, average teacher salary, and proportion of racial/ethnic minority students were most strongly associated with leaving rather than staying (see table 1). Teachers in schools identified by state education agencies for improvement were 23–36 percent more likely to be leavers than were teachers in schools not identified for improvement. Teachers in schools with an average salary of less than \$41,525 were 35 percent more likely to be leavers than were teachers in schools with an

average salary of \$55,149 or more. And teachers in schools with the highest proportions of racial/ethnic minority students were more likely to be leavers than were teachers in schools with the lowest proportions of racial/ethnic minority students.

Implications

The study identifies factors related to teacher mobility and attrition in Colorado, Missouri, and South Dakota from 2015/16 to 2016/17, providing region- and state-specific information that may help decisionmakers better design policy, practices, and research focused on attracting and keeping teachers. The findings based on combined data for the three states echo the findings of national studies, which suggest high mobility and attrition among special education teachers, inexperienced teachers, and teachers in schools identified for improvement by state education agencies.⁴ Other factors most strongly associated with moving or leaving were teacher age, years teaching in the same school and district, full-time teaching equivalency, individual and school-average teacher salary, school state accountability designation, and school proportion of racial/ethnic minority students.

Decisionmakers in Colorado, Missouri, and South Dakota may wish to use the findings to design policies or practices to retain teachers with the greatest risk of moving or leaving. For example, drawing on these findings, state and district administrators may choose to prioritize loan forgiveness, induction support, or other initiatives for new teachers, special education teachers, teachers in schools with low average teacher salaries, or teachers in schools with high proportions of racial/ethnic minority students.

The approach used in this study serves as a model for future research using state administrative data by illustrating typically available data and showing how they can be used to identify factors related to teacher mobility and attrition. Administrators and researchers in state education agencies and districts can replicate or adapt this study approach to continue to understand factors associated with mobility and attrition. For example, states or districts could incorporate other data about the nature and extent of induction support or the quality of building leadership to examine how those factors relate to the probability of teachers staying, moving, or leaving.

4. Podolsky, Kini, Bishop, & Darling-Hammond, 2016; Sutcher et al., 2016.

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