



What's Happening

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Retention, attrition, and mobility among teachers and administrators in West Virginia

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Key findings

Over 2008/09–2012/13:

- On average 90.1 percent of teachers and 87.7 percent of administrators stayed in the same West Virginia school district from one year to the next.
- On average 9.0 percent of teachers and 11.1 percent of administrators left the West Virginia public school system each year.
- On average 0.9 percent of teachers and 1.2 percent of administrators moved to a different school district in the West Virginia public school system each year.
- Of teachers with zero years of experience who began teaching in the West Virginia public school system in 2008/09, 32.0 percent had left by 2012/13.

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Summary

Members of the West Virginia School Leadership Research Alliance partnered with Regional Educational Laboratory Appalachia to study the average retention, attrition, and mobility rates among teachers and administrators in the West Virginia public school system. There is increasing evidence nationwide that low teacher and administrator retention rates adversely affect student academic outcomes, particularly in reading and math, which are reform priorities in many states (Béteille, Kalogrides, & Loeb, 2012; Branch, Hanushek, & Rivkin, 2012; Kane & Staiger, 2008; Ronfeldt, Lankford, Loeb, & Wyckoff, 2013). West Virginia policymakers and educators have thus expressed interest in increasing teacher and administrator retention rates to improve student achievement.

This report provides descriptive information about retention, attrition, and mobility among teachers and administrators that can be used to inform policy and program decisionmaking in West Virginia. The analyses were based on personnel data for teachers and administrators provided by the West Virginia Department of Education for the academic years 2008/09–2012/13, as well as district information covering the same years from the National Center for Education Statistics Common Core of Data. Unless otherwise stated, the retention, attrition, and mobility rates are annual averages for the academic years examined.

The study's primary findings included the following:

- On average 90.1 percent of teachers and 87.7 percent of administrators stayed in the same West Virginia school district from one year to the next; 9.0 percent of teachers and 11.1 percent of administrators left the West Virginia public school system.
- Female and male teachers left the system at similar rates (8.6 percent versus 10.1 percent); female administrators left the system at a lower rate than male administrators did (8.8 percent versus 13.2 percent).
- Teachers and administrators with fewer than 4 years or 15 or more years of experience left the system at roughly double the rates that other teachers (10.4–11.1 percent versus 4.3–5.6 percent) and administrators (12.2–13.0 percent versus 6.1–7.6 percent) did.
- Teachers with a doctoral degree left the system at a higher rate (13.3 percent) than did teachers with a master's degree (9.7 percent) or a bachelor's degree (8.2 percent). Administrators with a doctoral degree left the system at about double the rate that administrators with a bachelor's degree (14.8 percent versus 7.8 percent) did and at a higher rate than did administrators with a master's degree (11.0 percent).
- Teachers and administrators without National Board for Professional Teaching Standards certification left the system at a higher rate than did teachers with the certification (9.0 percent versus 6.9 percent among teachers and 11.3 percent versus 4.7 percent among administrators).
- Teachers earning the highest and lowest annual salaries left the system at the highest rates, and administrators making the highest annual salaries left the system at the highest rates.
- Teachers in rural districts left the system (9.1 percent) and moved to different districts (1.2 percent) at about the same rate, on average, as teachers working in town (9.0 percent and 1.0 percent), suburban (9.3 percent and 0.6 percent), and city (8.2 percent and 0.6 percent) school districts. Administrators in rural

(12.4 percent) and town (11.8 percent) districts left at higher rates than did administrators in suburban (8.9 percent) or city (7.9 percent) districts; administrators in rural (1.9 percent) and town (1.4 percent) districts moved to different districts at about the same rate as administrators in suburban (0.2 percent) and city (0.5 percent) districts.

- Very few teachers and administrators moved to a different school district in the state system (0.9 percent of teachers and 1.2 percent of administrators, on average).
- Of teachers with zero years of experience who began teaching in the West Virginia public school system in 2008/09, 32.0 percent had left within their first four years of teaching; on average 19.5 percent of teachers with zero years of experience who began teaching during each of the baseline years examined left after their first year.

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Why this study?

Among the reasons policymakers and educators focus on raising retention rates among teachers and administrators is that low teacher and administrator retention rates adversely affect student achievement, especially for students attending urban schools and schools with a high share of economically disadvantaged students (Béteille et al., 2012; Branch et al., 2012; Levy, Jablonski, & Fields, 2006; Miller, 2013; Rivkin, Hanushek, & Kain, 2005; Ronfeldt et al., 2013; Vanderhaar, Muñoz, & Rodosky, 2006; Weinstein, Jacobowitz, Ely, Landon, & Schwartz, 2009).

Various teacher and administrator characteristics tend to be associated with different retention rates (Battle, 2010; Guin, 2004; Ingersoll, 2001; Ringel, Gates, Chung, Brown, & Ghosh-Dastidar, 2004). Further, retention rates appear to differ based on the characteristics of the school districts where teachers and administrators are employed (Hanushek & Rivkin, 2007; Scafidi, Sjoquist, & Stinebrickner, 2007). Much of the literature describes retention, attrition, and mobility rates among teachers and administrators in individual schools (Guarino, Santibañez, & Daley, 2006). These analyses have, for example, described the percentage of teachers and administrators who stay in the same school from one year to the next, leave the public school system, or move to different schools within the system (Goldring & Taie, 2014; Goldring, Taie, & Riddles, 2014). Researchers have used state-level personnel data to examine retention, attrition, and mobility among teachers and administrators at the school level in other states, including Georgia, Illinois, North Carolina, and Texas (Fuller & Young, 2009; Gates et al., 2006; Hanushek, Kain, & Rivkin, 2004; Ladd, 2011; Scafidi et al., 2007).

Few studies have focused on retention, attrition, and mobility at the school district level. Those studies show that teacher retention at the district level is negatively associated with district property wealth and the percentage of racial/ethnic minority students (Theobald, 1990). Similar to studies focused on school-level retention, attrition, and mobility (Ingersoll, 2001), district-level retention appears lower among teachers with less than 3 years of experience or more than 15 years of experience (Theobald, 1990). District expenditures on professional development and central administration appear related to teacher retention. Districts that spend more on central administration and less on teacher professional development have lower retention rates than districts that spend less on central administration and more on teacher professional development (Theobald & Gritz, 1996).

West Virginia stakeholders have expressed interest in identifying ways to improve teacher and administrator retention in the state's public school districts. Stakeholders also wanted to know whether school districts located in rural settings were experiencing higher rates of teacher and administrator attrition and mobility than districts in town, suburban, and city locales. Likewise, stakeholders were concerned that newer teachers were leaving the West Virginia public school system at a higher rate than teachers with more experience, potentially contributing to staffing challenges in certain school districts.

The dearth of recent information about district-level retention, attrition, and mobility rates in West Virginia public school districts prompted members of the West Virginia School Leadership Research Alliance to partner with Regional Educational Laboratory (REL) Appalachia to conduct this descriptive study. The alliance consists of school districts, regional education service agencies, and state education agencies, and its top priority

The few studies that have focused on retention, attrition, and mobility at the school district level show that teacher retention at the district level is negatively associated with district property wealth and the percentage of racial/ethnic minority students

is to support effective teachers and leaders. The purpose of this study is to provide alliance members with information about average retention, attrition, and mobility rates among teachers and administrators in West Virginia school districts to inform district policy and programmatic decisions related to improving teacher and administrator retention. District-level attrition and mobility data may be of particular interest to school district staff seeking information about the costs of hiring new teachers and administrators to replace those who are leaving the public school system or moving to different districts.

Because retention, attrition, and mobility among teachers and administrators are areas of concern for other states and on a national level (Goldring & Taie, 2014; Goldring et al., 2014), this study may also be of interest to policymakers beyond West Virginia. Thus, this study's findings serve as an important reference point for others working to understand retention, attrition, and mobility among teachers and administrators.

What the study examined

The study addressed the following research questions:

- What were the average retention and attrition rates among teachers and administrators in West Virginia public school districts between 2008/09 and 2012/13?
- How did average retention and attrition rates vary by district, teacher or administrator characteristics, and district characteristics?
- What were the average mobility rates among teachers and administrators in West Virginia public school districts between 2008/09 and 2012/13?
- How did average mobility rates vary by teacher or administrator characteristics and district characteristics?
- What were the annual and overall average attrition rates among beginning teachers employed in West Virginia public school districts between 2008/09 and 2012/13?

Key terms used in this report are defined in box 1. The study's data and methodology are summarized in box 2 and explained in detail in appendix A.

Box 1. Key terms

Administrators. Superintendents, deputy superintendents, principals, assistant principals, or vice principals, as defined by the West Virginia Department of Education.

Attrition. Refers to leaving the West Virginia public school system and not returning to the public school system in any of the follow-up years. *Average attrition rate* refers to the average percentage of teachers or administrators who left the system during those years. See table B1 in appendix B for average attrition data for teachers and administrators.

Baseline year. The first academic year the individual appears in the dataset. Possible baseline years are 2008/09, 2009/10, 2010/11, or 2011/12. It is possible, but rare, for an individual to appear in more than one baseline year for the purposes of the first and second research questions. For example, an individual who appeared in the dataset in 2008/09 and left in 2009/10 may have returned to a West Virginia public school district in 2011/12.

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The purpose of this study is to provide alliance members with information about average retention, attrition, and mobility rates among teachers and administrators in West Virginia school districts to inform district policy and programmatic decisions related to improving teacher and administrator retention

Box 1. Key terms *(continued)*

Beginning teachers. Teachers who had zero years of experience and were hired in a West Virginia public school district during one of the baseline years. If the baseline year is 2008/09 a beginning teacher is a person who had zero years of experience and who was hired by a West Virginia public school district in that year. (See table C1 in appendix C for cumulative attrition data for beginning teachers.)

Follow-up year. The successive year after the individual's baseline year; in this study follow-up years are academic years 2009/10, 2010/11, 2011/12, and/or 2012/13.

Mobility. Refers to moving from one West Virginia public school district in one academic year to a different West Virginia public school district in the next academic year. *Average mobility rate* refers to the average percentage of teachers or administrators who moved to a different school district in the West Virginia public school system from the baseline year to the follow-up year across each of the four periods observed.

Retention. Refers to staying in the same West Virginia school district from one year to the next. *Average retention rate* refers to the average percentage of teachers or administrators who stayed in the same school district from the baseline year to the follow-up year across each of the four periods observed.

Teachers. Staff who work in classroom instructional roles.

Box 2. Data and methods

This study used data provided by the West Virginia Department of Education. The data included every administrator and teacher employed by the state of West Virginia in academic years 2008/09, 2009/10, 2010/11, 2011/12, and 2012/13. The dataset included information about their gender, years of experience, highest degree earned, National Board for Professional Teaching Standards certification status, annual salary, district/school level assignment, and employment status. In addition, data on West Virginia school districts were obtained from the National Center for Education Statistics Common Core of Data for 2008/09–2011/12¹ (U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2013). These data included district locales, student enrollment, percentage of students who were racial/ethnic minority students, percentage of students who were eligible for the school lunch program, and percentage of students who were limited English proficient students.

To determine the status of teachers and administrators for this study, each teacher or administrator was assigned to a single professional role each year in order to compare his or her employment from one year to the next. Teachers who assumed any type of administrative position were included in the teacher retention rate if they were employed in the same school district. Teachers who moved to another school district to become administrators were included in the mobility rate. A similar approach was used for administrators who returned to classroom teaching in the same school district or moved to a different school district to return to teaching.

For the study every teacher and administrator in West Virginia was assigned to a single school district location in each year analyzed. (Those who worked in more than one district were assigned to the one in which they worked the most.) This assignment then was compared from one year to the next to determine whether the teacher or administrator was retained in

(continued)

Box 2. Data and methods *(continued)*

the same school district, left the West Virginia public school system, or moved to a different school district in West Virginia. Retention, attrition, and mobility rates were calculated for each year-to-year comparison and then averaged across the four comparisons.

Beginning teachers in each of the baseline years were identified from the entire population of teachers, and their employment status in the baseline year was compared with follow-up years. That is, it was determined whether teachers who began teaching in 2008/09 were still teaching in 2009/10, 2010/11, 2011/12, and 2012/13; whether teachers who began teaching in 2009/10 were still teaching in 2010/11, 2011/12, and 2012/13; and so on. Attrition rates were calculated by dividing the number of beginning teachers who left the system in each academic year by the total number of beginning teachers identified (see appendix A for more detail on this analysis).

Cross-tabulations were created to compare average retention, attrition, and mobility rates among teachers and administrators across the different characteristics listed above. Similar cross-tabulations compared average retention, attrition, and mobility rates based on the district characteristics listed.

A 2 percentage point difference was used as the threshold for identifying (and discussing) substantive differences between comparison groups (for example, female and male; rural, town, suburban, or city; and so on). This threshold is arbitrary, selected on the basis that it would yield the most policy-relevant information. Differences of less than 2 percentage points are not highlighted in the report narrative, but all comparisons are shown in the tables.

Note

1. Data from the Common Core of Data from 2012/13 were not used because the study did not calculate retention and attrition rates for the 2012/13 academic year and because 2012/13 district characteristics were not required for the analysis.

What the study found

This section summarizes average retention, attrition, and mobility rates among teachers and administrators overall and by district, average retention and attrition rates' relationship with teacher and administrator characteristics and with district characteristics, and annual and average attrition rates for beginning teachers.

Close to 90 percent of teachers and administrators stayed in their West Virginia school district during the study period

On average 90.1 percent of teachers stayed in the same school district from one year to the next over the study period, 9.0 percent left the West Virginia public school system, and 0.9 percent moved to a different school district in the system. Among administrators 87.7 percent stayed in the same school district, 11.1 percent left the West Virginia public school system, and 1.2 percent moved to a different school district in the system.

Average retention, attrition, and mobility rates varied by district, but rates among administrators varied more than rates among teachers

Across the 55 West Virginia public school districts, average district-level retention rates among teachers ranged from 83.0 percent to 93.6 percent, average district-level attrition

rates among teachers ranged from 6.0 percent to 14.9 percent, and average district-level mobility rates among teachers ranged from 0.2 percent to 3.9 percent (map 1; see also table B1 in appendix B). Average district-level retention rates among administrators ranged from 66.2 percent to 96.7 percent, average district-level attrition rates among administrators ranged from 3.3 percent to 31.2 percent, and average district-level mobility rates among administrators were as high as 9.8 percent, though a few districts had rates at or close to zero (map 2; see also table B2 in appendix B).

Teachers left the West Virginia public school system at different rates depending on their years of experience, highest degree earned, national board certification status, and annual salary

The rate at which teachers left the West Virginia public school system varied by at least 2 percentage points depending on some of the teacher characteristics analyzed (table 1).

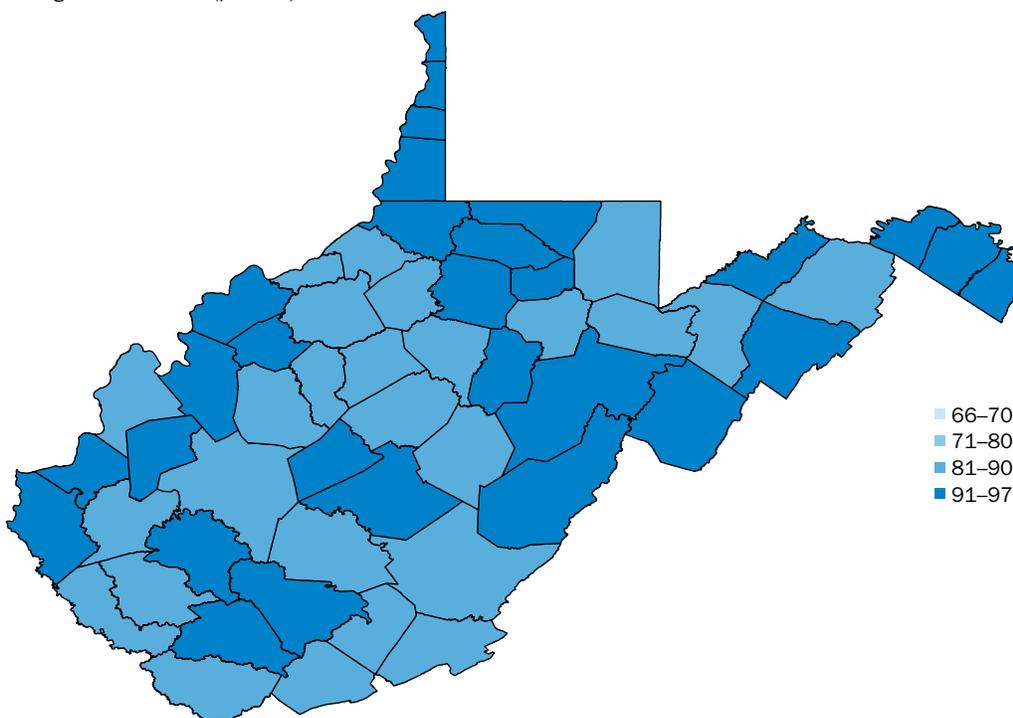
Years of experience. Teachers with fewer than 4 years of experience and teachers with 15 or more years of experience left the public school system at higher rates than did teachers with 4–9 or 10–14 years of experience.

Highest degree earned and national board certification status. Teachers with a doctoral degree left the public school system at a higher rate than did teachers with a master’s or bachelor’s degree. Teachers without National Board for Professional Teaching Standards

Across the 55 West Virginia public school districts, average district-level retention rates among teachers ranged from 83.0 percent to 93.6 percent

Map 1. Average retention rates among teachers vary across the 55 West Virginia public school districts, 2008/09–2012/13

Average retention rate (percent)

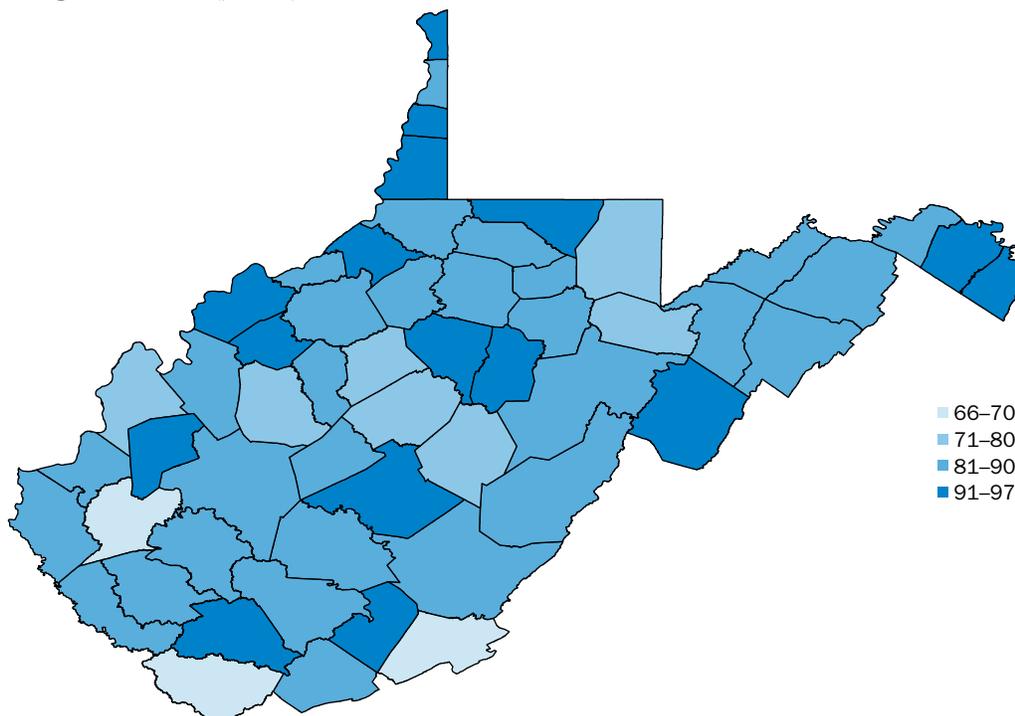


Note: See table B1 in appendix B for a complete list of average retention, attrition, and mobility rates among teachers in each school district.

Source: Authors’ calculations based on school personnel data provided by the West Virginia Department of Education.

Map 2. Average retention rates among administrators vary across the 55 West Virginia public school districts, 2008/09–2012/13

Average retention rate (percent)



Across the 55 West Virginia public school districts, average district-level retention rates among administrators ranged from 66.2 percent to 96.7 percent

Note: See table B2 in appendix B for a complete list of average retention, attrition, and mobility rates among administrators in each school district.

Source: Authors' calculations based on school personnel data provided by the West Virginia Department of Education.

certification left the public school system at a higher rate (9.0 percent) than did teachers with the certification (6.9 percent).

Annual salary. Teachers earning the highest and lowest annual salaries left the public school system at the highest rates.

Districts with a larger proportion of students eligible for the federal school lunch program had higher teacher attrition rates than did districts with a smaller proportion

Average attrition rates among teachers did not differ across most district characteristics—locale, student enrollment, percentage of students who are racial/ethnic minority students, and percentage of students who are limited English proficient students. However, teachers did leave the West Virginia public school system at different rates across districts depending on the percentage of students eligible for the federal school lunch program. Districts with a larger proportion of students eligible for the school lunch program had higher teacher attrition rates than did districts with a smaller proportion (table 2).

Table 1. Average retention and attrition rates among teachers in West Virginia public school districts, by teacher characteristic, 2008/09–2012/13

Characteristic	Average number of teachers	Average retention rate (percent)	Average attrition rate (percent)
Gender			
Female	15,004	90.5	8.6
Male	4,443	88.6	10.1
Years of experience			
Fewer than 4 years	3,312	86.9	10.4
4–9 years	4,035	93.3	5.6
10–14 years	2,387	95.1	4.3
15 or more years	9,713	88.6	11.1
Highest degree earned			
Bachelor's degree	8,995	90.7	8.2
Master's degree	10,372	89.6	9.7
Doctoral degree	64	85.9	13.3
National Board for Professional Teaching Standards certification			
Yes	289	92.6	6.9
No	18,188	90.0	9.0
Annual salary^a			
Less than \$37,082	4,749	88.7	9.1
\$37,082–\$44,722	5,368	93.9	5.1
\$44,723–\$51,861	4,413	93.3	6.4
More than \$51,861	4,918	84.4	15.4
School level taught			
Elementary school	8,062	91.0	8.4
Middle school	3,881	90.4	8.6
High school	5,027	89.2	9.6
Combination school ^b	2,081	89.4	9.6

Teachers with fewer than 4 years of experience and teachers with 15 or more years of experience left the public school system at higher rates than did teachers with 4–9 or 10–14 years of experience

Note: The average number of teachers is presented as a reference and may not sum to the same total in each category of characteristics because of missing data, because of rounding, or because teachers taught at more than one school level. Percentages do not sum to 100 because the table excludes teachers who moved to another West Virginia public school district.

a. Reflects salary quartiles from the first year of data (2008/09).

b. Combination schools serve students in a variety of grade-level configurations and thus could not be classified as elementary, middle, or high school.

Source: Authors' calculations based on teacher personnel data provided by the West Virginia Department of Education.

Administrators left the West Virginia public school system at different rates depending on their gender, years of experience, highest degree earned, national board certification status, annual salary, and district- or school-level assignment

The rate at which administrators left the West Virginia public school system varied by at least 2 percentage points for every administrator characteristic analyzed (table 3).

Gender. Female administrators left the public school system at a lower rate than male administrators (8.8 percent versus 13.2 percent).

Table 2. Average retention and attrition rates among teachers in West Virginia public school districts, by district characteristic, 2008/09–2012/13

Characteristic	Average number of teachers	Average retention rate (percent)	Average attrition rate (percent)
Locale			
Rural	7,938	89.7	9.1
Town	5,289	90.0	9.0
Suburban	3,499	90.1	9.3
City	2,722	91.2	8.2
Student enrollment			
Fewer than 1,976 students	1,334	88.3	9.9
1,976–3,862 students	2,669	88.8	9.4
3,863–6,507 students	4,703	90.2	9.1
More than 6,507 students	10,741	90.6	8.7
Percentage of students who are racial/ethnic minority students			
Less than 1.5	1,348	89.5	9.3
1.5–2.2	3,301	90.5	8.3
2.3–5.1	4,459	89.9	9.1
More than 5.1	10,339	90.1	9.1
Percentage of students eligible for the federal school lunch program			
Less than 47.7	4,692	91.9	7.5
47.7–52.5	7,082	90.5	8.7
52.6–57.5	3,664	89.3	9.6
More than 57.5	3,988	87.9	10.7
Percentage of students who are limited English proficient			
Below median (below 0.1 percent)	6,769	89.1	9.6
Median or higher (0.1 percent or higher)	12,678	90.6	8.6

Districts with a larger proportion of students eligible for the school lunch program had higher teacher attrition rates than did districts with a smaller proportion

Note: Average number of teachers is presented as a reference and may not sum to the same total in each category of characteristics because of missing data or because of rounding. Percentages do not sum to 100 because the table excludes teachers who moved to another West Virginia public school district. Ranges reflect school district characteristics as of the 2008/09 academic year and represent quartiles in that year.

Source: Authors' calculations based on teacher personnel data provided by the West Virginia Department of Education and school district information obtained from the U.S. Department of Education, National Center for Education Statistics, Common Core of Data.

Years of experience. Administrators with fewer than 4 years of experience and administrators with 15 or more years of experience left the public school system at about twice the rate of administrators with 4–9 or 10–14 years of experience.

Highest degree earned and national board certification status. Administrators with higher degrees had higher average attrition rates. Administrators without National Board for Professional Teaching Standards certification left the public school system at a rate more than double that of administrators with the certification (11.3 percent versus 4.7 percent).

Annual salary. Administrators earning an annual salary of more than \$69,274 left the public school system at a rate almost double that of administrators with an annual salary of less than \$69,275 (13.9 percent versus 8.1 percent).

Table 3. Average retention and attrition rates among administrators in West Virginia public school districts, by administrator characteristic, 2008/09–2012/13

Characteristic	Average number of administrators	Average retention rate (percent)	Average attrition rate (percent)
Gender			
Female	611	90.3	8.8
Male	639	85.2	13.2
Years of experience^a			
Fewer than 4 years	8	80.6	13.9
4–9 years	115	90.0	7.6
10–14 years	149	92.6	6.1
15 or more years	978	86.8	12.2
Highest degree earned			
Bachelor's degree	23	92.2	7.8
Master's degree	1,183	87.9	11.0
Doctoral degree	42	80.5	14.8
National Board for Professional Teaching Standards certification			
Yes	21	94.1	4.7
No	1,172	87.6	11.3
Annual salary^b			
Less than \$61,482	314	90.0	8.1
\$61,482–\$69,274	305	90.8	8.3
\$69,275–\$77,346	301	85.1	13.9
More than \$77,346	330	85.0	14.0
District- or school-level assignment			
Central office	127	81.8	15.4
Elementary school	471	88.8	10.7
Middle school	238	90.0	9.0
High school	296	87.7	10.5
Combination school ^c	119	84.8	13.5

Female administrators left the public school system at a lower rate than male administrators (8.8 percent versus 13.2 percent)

Note: The average number of administrators is presented as a reference and may not sum to the same total in each category of characteristics because of missing data or because of rounding. Percentages may not sum to 100 because the table excludes teachers who moved to another West Virginia public school district.

a. Includes past experience as a teacher in West Virginia public schools, if applicable.

b. Reflects salary quartiles from 2008/09.

c. Combination schools serve students in a variety of grade-level configurations and thus could not be classified as elementary, middle, or high school.

Source: Authors' calculations based on administrator personnel data provided by the West Virginia Department of Education.

District/school level assignment. Administrators working in the central office left the public school system at the highest rate (15.4 percent). Administrators working in elementary, middle, and high schools left the system at a rate about a third lower (9.0–10.7 percent). Administrators in combination schools (schools serving students in a variety of grade-level configurations) left at a rate similar to that of administrators working in the central office.

Administrators left the West Virginia public school system at different rates depending on district locale, student enrollment, percentage of students who are racial/ethnic minority students, percentage of students eligible for the federal school lunch program, and percentage of students who are limited English proficient students

The rate at which administrators left the West Virginia public school system varied by at least 2 percentage points for every district characteristic analyzed (table 4).

Locale. Administrators in school districts located in rural areas and towns left the public school system at higher rates than did administrators in suburban and city school districts.

Student enrollment. Administrators in districts serving 1,976–3,862 students left the public school system at the highest rate. Administrators in districts serving fewer than

Administrators in school districts located in rural areas and towns left the public school system at higher rates than did administrators in suburban and city school districts

Table 4. Average retention and attrition rates among administrators in West Virginia public school districts, by district characteristic, 2008/09–2012/13

Characteristic	Average number of administrators	Average retention rate (percent)	Average attrition rate (percent)
Locale			
Rural	531	85.7	12.4
Town	336	86.8	11.8
Suburban	220	90.9	8.9
City	163	91.6	7.9
Student enrollment			
Fewer than 1,976 students	98	84.2	12.8
1,976–3,862 students	187	81.4	15.5
3,863–6,507 students	318	88.2	10.8
More than 6,507 students	647	89.8	9.6
Percentage of students who are racial/ethnic minority students			
Less than 1.5	89	79.7	17.5
1.5–2.2	229	86.4	11.3
2.3–5.1	305	88.5	10.6
More than 5.1	627	88.9	10.3
Percentage of students eligible for the federal school lunch program			
Less than 47.7	283	91.5	7.9
47.7–52.5	440	88.5	10.3
52.6–57.5	248	87.7	11.7
More than 57.5	277	82.6	14.9
Percentage of students who are limited English proficient students			
Below median (below 0.1 percent)	466	84.6	13.1
Median or higher (0.1 percent or higher)	784	89.5	9.9

Note: Average number of administrators is presented as a reference and may not sum to the same total in each category of characteristics because of rounding or because of missing data. Percentages in rows do not sum to 100 percent because the table excludes teachers who moved to another West Virginia public school district. Ranges reflect school district characteristics as of the 2008/09 academic year and represent quartiles in that year.

Source: Authors' calculations based on administrator personnel data provided by the West Virginia Department of Education and school district information obtained from the U.S. Department of Education, National Center for Education Statistics, Common Core of Data.

1,976 students left at a somewhat lower rate, and administrators in districts serving more than 3,862 students left at the lowest rate.

Percentage of students who are racial/ethnic minority students. Administrators in schools with the lowest percentage of students who are racial/ethnic minority students (less than 1.5 percent) left the public school system at the highest rate. This pattern differs from previous research, which has shown that administrators tend to leave schools and districts serving a larger proportion of racial/ethnic minority students (Gates et al., 2006; Ringel et al., 2004).

Percentage of students eligible for the federal school lunch program. The percentage of administrators who left the public school system was nearly twice as high in districts where more than 57.5 percent of students were eligible for the federal school lunch program as in districts where less than 47.7 percent were eligible.

Percentage of students who are limited English proficient students. Administrators in districts serving a smaller percentage of limited English proficient students left the public school system at a higher rate than did administrators in districts serving a larger percentage of limited English proficient students.

The average mobility rate among teachers in West Virginia school districts was less than 3 percent across all personal characteristics and varied depending on teachers' years of experience and annual salary

For all personal characteristics the average mobility rate was lower than the average attrition rate and was more than 80 percentage points lower than the average retention rate (see box 1 for definitions of mobility and attrition). This suggests that teachers in the West Virginia public school system who leave their school district are leaving the system and not simply moving to other West Virginia school districts (table 5).

Years of experience. Teachers with fewer than 4 years of experience moved to a different West Virginia school district at a higher rate than did teachers with 10–14 years of experience and teachers with 15 or more years of experience.

Annual salary. Teachers earning an annual salary of less than \$37,082 moved to a different district at a higher rate than did teachers earning an annual salary of more than \$51,861.

The average mobility rate among administrators in West Virginia school districts was less than 6 percent across all personal characteristics and varied depending on administrators' years of experience and highest degree earned

Across all personal characteristics the average mobility rate among administrators was lower than the average attrition rate, except for national board certification status, and was more than 75 percentage points lower than any average retention rate. This suggests that administrators in the West Virginia public school system are leaving the system and not simply moving to other West Virginia school districts (table 6).

The percentage of administrators who left the public school system was nearly twice as high in districts where more than 57.5 percent of students were eligible for the federal school lunch program as in districts where less than 47.7 percent were eligible

Table 5. Average mobility rates among teachers in West Virginia public school districts, by personal characteristic, 2008/09–2012/13

Characteristic	Average number of teachers	Average mobility rate (percent)
Gender		
Female	15,004	0.9
Male	4,443	1.3
Years of experience		
Fewer than 4 years	3,312	2.7
4–9 years	4,035	1.1
10–14 years	2,387	0.6
15 or more years	9,713	0.3
Highest degree earned		
Bachelor's degree	8,995	1.1
Master's degree	10,372	0.7
Doctoral degree	64	0.8
National Board for Professional Teaching Standards certification		
Yes	289	0.5
No	18,188	1.0
Annual salary^a		
Less than \$37,082	4,749	2.2
\$37,082–\$44,722	5,368	1.0
\$44,723–\$51,861	4,413	0.3
More than \$51,861	4,918	0.2
School level taught		
Elementary school	8,062	0.6
Middle school	3,881	1.0
High school	5,027	1.2
Combination school ^b	2,081	1.0

Teachers with fewer than 4 years of experience moved to a different West Virginia school district at a higher rate than did teachers with 10–14 years of experience and teachers with 15 or more years of experience

Note: Average number of teachers is presented as a reference and may not sum to the same total in each category of characteristics because of missing data, because of rounding, or because teachers taught at more than one school level.

a. Reflects salary quartiles from 2008/09.

b. Combination schools serve students in a variety of grade-level configurations and thus could not be classified as elementary, middle, or high school.

Source: Authors' calculations based on personnel data provided by the West Virginia Department of Education.

Years of experience. Administrators with fewer than four years of experience moved to a different West Virginia school district at more than twice the rate that administrators with four or more years of experience did.

Highest degree earned. Administrators with a doctoral degree moved to a different school district at four times the rate that administrators with a bachelor's or master's degree did.

Level assigned. Administrators working in the central office moved to a different school district at a higher rate than administrators working in elementary schools did but at about the same rate that administrators in middle, high, and combination schools did.

Table 6. Average mobility rates among administrators in West Virginia public school districts, by personal characteristic, 2008/09–2012/13

Characteristic	Average number of administrators	Average mobility rate (percent)
Gender		
Female	611	0.9
Male	639	1.6
Years of experience^a		
Fewer than 4 years	8	5.5
4–9 years	115	2.4
10–14 years	149	1.3
15 or more years	978	1.0
Highest degree earned		
Bachelor's degree	23	0.0
Master's degree	1,183	1.1
Doctoral degree	42	4.7
National Board for Professional Teaching Standards certification		
Yes	21	1.2
No	1,172	1.1
Annual salary^b		
Less than \$61,482	314	1.9
\$61,482–\$69,274	305	0.9
\$69,275–\$77,346	301	1.0
More than \$77,346	330	1.0
District level or school level assigned		
Central office	127	2.8
Elementary school	471	0.5
Middle school	238	1.0
High school	296	1.8
Combination school ^c	119	1.7

Administrators with fewer than four years of experience moved to a different West Virginia school district at more than twice the rate that administrators with four or more years of experience did

Note: Average number of administrators is presented as a reference and may not sum to the same total in each category of characteristics because of missing data or because of rounding.

a. Includes past experience as a teacher in West Virginia public schools, if applicable.

b. Reflects salary quartiles from 2008/09.

c. Combination schools serve students in a variety of grade-level configurations and thus could not be classified as elementary, middle, or high school.

Source: Authors' calculations based on personnel data provided by the West Virginia Department of Education.

Teachers moved to a different district at about the same rate regardless of the characteristics of their baseline district

Regardless of the district characteristic compared, average teacher mobility rates were about the same, ranging from 0.6 percent to 1.8 percent (table 7).

Table 7. Average mobility rates among teachers in West Virginia public school districts, by district characteristic, 2008/09–2012/13

Characteristic	Average number of teachers	Average mobility rate (percent)
Locale		
Rural	7,938	1.2
Town	5,289	1.0
Suburban	3,499	0.6
City	2,722	0.6
Student enrollment		
Fewer than 1,976 students	1,334	1.8
1,976–3,862 students	2,669	1.8
3,863–6,507 students	4,703	0.7
More than 6,507 students	10,741	0.7
Percentage of students who are racial/ethnic minority students		
Less than 1.5	1,348	1.2
1.5–2.2	3,301	1.2
2.3–5.1	4,459	1.0
More than 5.1	10,339	0.8
Percentage of students eligible for the federal school lunch program		
Less than 47.7	4,692	0.6
47.7–52.5	7,082	0.8
52.6–57.5	3,664	1.1
More than 57.5	3,988	1.4
Percentage of students who are limited English proficient students		
Below median (below 0.1 percent)	6,769	1.3
Median or higher (0.1 percent or higher)	12,678	0.8

Note: Average number of teachers is presented as a reference and may not sum to the same total in each category of characteristics because of missing data or because of rounding. Ranges reflect school district characteristics as of the 2008/09 academic year and represent quartiles in that year.

Source: Authors' calculations based on teacher and administrator personnel data provided by the West Virginia Department of Education and school district information obtained from the U.S. Department of Education, National Center for Education Statistics, Common Core of Data.

Administrators in West Virginia school districts enrolling fewer students changed districts at a higher rate than did administrators in districts enrolling a larger number of students

Administrators moved to a different district at varying rates based on the characteristics of the students the district served

Administrators moved to a different school district at different rates depending on district characteristics, including student enrollment and percentage of students who are racial/ethnic minority students (table 8).

Student enrollment. Administrators in West Virginia school districts enrolling fewer students changed districts at a higher rate than did administrators in districts enrolling a larger number of students.

Percentage of students who are racial/ethnic minority students. Administrators in districts serving a smaller proportion of racial/ethnic minority students had higher average mobility rates than did administrators in districts serving a larger proportion of racial/ethnic minority students.

Table 8. Average mobility rates among administrators in West Virginia public school districts, by district characteristic, 2008/09–2012/13

Characteristic	Average number of administrators	Average mobility rate (percent)
Locale		
Rural	531	1.9
Town	336	1.4
Suburban	220	0.2
City	163	0.5
Student enrollment		
Fewer than 1,976 students	98	3.0
1,976–3,862 students	187	3.1
3,863–6,507 students	318	1.0
More than 6,507 students	647	0.6
Percentage of students who are racial/ethnic minority students		
Less than 1.5	89	2.8
1.5–2.2	229	2.3
2.3–5.1	305	0.9
More than 5.1	627	0.8
Percentage of students eligible for the federal school lunch program		
Less than 47.7	283	0.6
47.7–52.5	440	1.2
52.6–57.5	248	0.6
More than 57.5	277	2.5
Percentage of students who are limited English proficient students		
Below median (below 0.1 percent)	466	2.3
Median or higher (0.1 percent or higher)	784	0.6

Administrators in districts serving a smaller proportion of racial/ethnic minority students had higher average mobility rates than did administrators in districts serving a larger proportion of racial/ethnic minority students

Note: Average number of administrators is presented as a reference and may not sum to the same total in each category of characteristics because of missing data or because of rounding. Ranges reflect school district characteristics as of the 2008/09 academic year and represent quartiles in that year.

Source: Authors' calculations based on teacher and administrator personnel data provided by the West Virginia Department of Education and school district information obtained from the U.S. Department of Education, National Center for Education Statistics, Common Core of Data.

About a fifth of beginning teachers left the West Virginia public school system after their first year of teaching, and a third left by the end of the fourth year

On average 19.5 percent of beginning teachers who were initially employed in the West Virginia public school system during one of the four baseline years left the system after their first year of teaching. Among those newly hired in the 2008/09, 2009/10, or 2010/11 academic years, 26.8 percent left after two years of teaching. Among those first hired in 2008/09 or 2009/10, 30.8 percent left after three years, and of those hired in 2008/09, 32.0 percent left after four years (were no longer employed in 2012/13; table 9). Cumulative attrition rates among beginning teachers in each district are provided in appendix C.

Table 9. Percentage of beginning teachers who left the West Virginia public school system after each year of teaching, 2008/09–2012/13

Baseline year	Number of beginning teachers	Cumulative attrition rate (percent)			
		After one year	After two years	After three years	After four years
2008/09	807	20.1	23.9	28.5	32.0
2009/10	811	21.6	28.5	33.1	na
2010/11	832	20.7	28.0	na	na
2011/12	776	15.7	na	na	na
Average	807	19.5	26.8	30.8	32.0

na is not applicable because beginning teachers had not yet taught that many years by 2012/13.

Source: Authors' calculations based on data provided by the West Virginia Department of Education.

Implications of the study findings

The study's findings are important for two reasons. First, the findings contribute to the sparse literature on retention, attrition, and mobility among teachers and administrators at the school district level in West Virginia. The findings indicate that the teacher and administrator workforce is largely stable. On average West Virginia public school districts retain 90 percent of teachers and 88 percent of administrators from one year to the next; however, a third of beginning teachers who started teaching in the West Virginia public school system in 2008/09 left by 2012/13. Furthermore, administrators with fewer than 4 years of experience and administrators with 15 or more years of experience left the system at double the rate that other administrators did (about 13 percent versus about 7 percent).

Second, the study findings can be used to inform state and district policy initiatives that aim to improve teacher and administrator retention in school districts serving specific student populations. For example, the average attrition rate among teachers and administrators was highest in school districts with the highest proportion of students eligible for the federal school lunch program. Policies providing resources for retaining personnel in these districts might lower the attrition rates. Likewise, upgraded hiring practices, better recruitment efforts, more competitive salary structures, and adequate investment in professional development and mentoring might increase teacher and administrator retention (Brill & McCartney, 2008; Odden, 2011; Smith & Ingersoll, 2004). At the state level the information could be used to inform policies aimed at improving retention of newer teachers (teachers who were identified as beginning teachers in one of the years covered in this study)—who left the West Virginia public school system at a higher rate. About 32 percent of beginning teachers employed by the West Virginia public school system in 2008/09 left the system by 2012/13, compared with 9 percent of teachers overall.¹

The data in this study can inform actions at the district and state levels, which might relate to estimating the cost of teacher and administrator attrition. Similarly, the findings can be used to identify differences in attrition and mobility rates that might be linked to district-level initiatives aimed at recruiting, retaining, and improving human resource management practices.

On average 19.5 percent of beginning teachers who were initially employed in the West Virginia public school system during one of the four baseline years left the system after their first year of teaching

Limitations of the study

The dataset did not include information describing why individual teachers or administrators moved to a different school district or left the West Virginia public school system. Without such information, the reason these teachers or administrators made the decisions can be inferred only from patterns in rates across personal or district characteristics. Additional information about the reasons teachers and administrators left the West Virginia public school system would allow policy and programmatic responses to target those working conditions, increasing retention.

The dataset also lacked information describing whether individual teachers and administrators left the public school system permanently, moved to a different state, or left the public school system to work in a private school. This information would provide important insights about the condition of the teacher and administrator labor market in West Virginia.

Further, the dataset did not contain information on the effectiveness of teachers and school administrators who stayed in the same school district, moved to a different school district, or left the West Virginia public school system. Thus, the study findings cannot address the comparative effectiveness of the teachers and administrators who were retained by districts throughout West Virginia and those who were not.

Finally, the study findings are descriptive and thus cannot assess the impact that higher attrition or mobility rates may have on school district performance.

The findings contribute to the sparse literature on retention, attrition, and mobility among teachers and administrators at the school district level in West Virginia and indicate that the teacher and administrator workforce is largely stable

Appendix A. Data and methodology

This appendix describes the data sources and details the study methodology used to complete this analysis.

Variables and sources

Teacher, administrator, and school district variables and their data sources are presented in table A1. All variables were assigned to teachers and administrators in each baseline year and follow-up year (2008/09, 2009/10, 2010/11, 2011/12, and 2012/13). Full-time equivalent status was used to determine whether a teacher or administrator was employed within the West Virginia public school system.

Description of the study population

The study included the entire population of teachers and administrators employed in West Virginia public school districts in 2008/09, 2009/10, 2010/11, 2011/12, and 2012/13. The dataset contained 77,787 teachers and 4,998 administrators in 55 school districts.

Table A1. Variables used in the retention, attrition, and mobility analyses

Variable	Source
Teacher and administrator variables	
Teacher or administrator ID	West Virginia Department of Education
National Board for Professional Teaching Standards certification status	West Virginia Department of Education
Gender	West Virginia Department of Education
Highest degree earned	West Virginia Department of Education
Years of experience ^a	West Virginia Department of Education
Teacher or administrator position code ^b	West Virginia Department of Education
Annual salary	West Virginia Department of Education
Full-time equivalent status ^c	West Virginia Department of Education
District or school level (central office, elementary, middle, high, combination)	West Virginia Department of Education
School district variables	
District ID	West Virginia Department of Education/ National Center for Education Statistics
Locale (rural, town, suburban, or city)	National Center for Education Statistics
Total student enrollment	National Center for Education Statistics
Percentage of students who are racial/ethnic minority students	National Center for Education Statistics
Percentage of students eligible for the federal school lunch program	National Center for Education Statistics
Percentage of students who are limited English proficient students	National Center for Education Statistics

Note: Variable names presented in the table have been revised for clarity. Actual variable names contained in the dataset provided by the West Virginia Department of Education were abbreviated.

a. Includes past experience as a teacher in West Virginia public schools, if applicable, for administrators.

b. Refers to a teacher's or administrator's primary area of responsibility. This code was used to filter from the dataset employees who were not working as teachers or administrators.

c. Approximates the amount of time a teacher or administrator spends in a particular role, school faculty, or school district. Teachers and administrators were assigned to the district in which the majority of their full-time equivalent assignment was located.

Source: Variables were provided by the West Virginia Department of Education and obtained from the National Center for Education Statistics Common Core of Data (U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2013).

Methods for descriptive analyses

Before analysis began the quality of the data received from the West Virginia Department of Education and the extent to which there were missing or invalid values were assessed. SAS[®] was used to create frequency counts of values for each of the key variables in the dataset provided by the West Virginia Department of Education. The frequencies included the number of nonmissing values, the number of values outside the valid range, and the number and percentage of missing values. The information on missing data was used to identify incomplete records for removal. Less than 5 percent of values were missing within and across all variables. Teacher and administrator records containing missing data were excluded from the analyses only when applicable data were missing (that is, pairwise deletion was used).

Next, individual teachers and administrators were identified. The dataset included duplicate personnel records reflecting teachers and administrators with multiple assignments in a school district. Duplicate records posed a challenge for these analyses, as teachers and administrators who appear in more than one record can inflate retention, attrition, and mobility estimates. To eliminate duplicate records and ensure unduplicated counts, teachers and administrators were assigned to a single school district based on their full-time equivalent assignment during that baseline year.

The school district where the majority of the teacher's or administrator's full-time equivalent assignment was located was considered his or her primary district assignment and was used to determine whether the teacher or administrator stayed in the district, left the school system, or moved to another district in the follow-up year. In the event that a teacher's or administrator's assignment was equally divided between two school districts, the district to which the largest proportion of salary could be attributed was designated as the primary assignment. A similar approach has been used elsewhere in statewide analyses of teacher retention, which have focused primarily on retention, attrition, and mobility at the school level (Lochmiller, Sugimoto, & Muller, 2016; Plecki, Elfers, Loeb, Zahir, & Knapp, 2005).

To further prevent duplicate entries, the position code field was used to exclude employees for whom a portion of their assignments did not involve instruction or school administration. The position code field was used not in the descriptive analyses but as a filtering mechanism to identify teachers and administrators as of the baseline year. This helped ensure that the analyses focused on retention, attrition, and mobility among teachers and administrators and did not include staff working in other roles.

Next, the dataset was merged with district-level information obtained from the National Center for Education Statistics, Common Core of Data. Unique identification numbers for school districts were used to link individual teacher and administrator information with district information. The merge resulted in a single dataset that included teacher, administrator, and district characteristics.

Calculating retention, attrition, and mobility rates. After data were merged, the analyses involved calculating frequencies and percentages among teachers and administrators who stayed in the same school district, left the West Virginia public school system, or moved to another West Virginia school district—from one baseline year to the follow-up

year. Retention, attrition, and mobility rates were calculated for four baseline-to-follow-up periods: from 2008/09 to 2009/10, from 2009/10 to 2010/11, from 2010/11 to 2011/12, and from 2011/12 to 2012/13. Average rates represent the mean of these four separate one-year rates.

Calculating attrition rates among beginning teachers. Beginning teachers were defined as having zero years of teaching experience in their baseline year and were identified from the entire population of teachers in each academic year 2008/09, 2009/10, 2010/11, and 2011/12. The number of beginning teachers identified ranged from 776 to 832, depending on the year. Each beginning teacher's initial employment status was compared with each subsequent academic year. For example, teachers who began teaching in 2008/09 were identified in 2009/10, 2010/11, 2011/12, and 2012/13 to determine whether they were still teachers or had left the West Virginia public school system; beginning teachers in 2009/10 were compared with 2010/11, 2011/12, and 2012/13; and so on. Teachers who were not found in the dataset as teachers in any follow-up year were considered to have left the system. These annual attrition rates were calculated by dividing the number of beginning teachers who left the public school system in each follow-up year by the total number of beginning teachers identified as of the baseline year (2008/09, 2009/10, 2010/11, or 2011/12).

Appendix B. Average retention, attrition, and mobility rates among teachers and administrators by West Virginia public school district

This appendix provides information about district-level retention, attrition, and mobility among teachers and administrators in West Virginia public schools. The data may be of interest to school district administrators seeking information about their districts, as well as to other stakeholders who are interested in knowing more specifically how retention, attrition, and mobility rates vary across the 55 West Virginia public school districts.

Table B1. Average retention, attrition, and mobility rates among teachers in West Virginia public school districts, 2008/09–2012/13

District	Average number of teachers	Average retention rate (percent)	Average attrition rate (percent)	Average mobility rate (percent)
Barbour	653	88.7	9.0	2.3
Berkeley	4,981	92.3	7.1	0.6
Boone	1,495	90.4	8.7	0.9
Braxton	706	88.4	8.8	2.8
Brooke	980	90.7	8.8	0.5
Cabell	3,353	90.8	8.6	0.6
Calhoun	340	85.6	12.6	1.8
Clay	569	92.8	6.5	0.7
Doddridge	355	89.9	8.7	1.4
Fayette	2,010	86.2	12.3	1.5
Gilmer	261	84.3	14.6	1.1
Grant	514	85.4	10.7	3.9
Greenbrier	1,461	88.3	10.7	1.0
Hampshire	931	87.4	10.4	2.2
Hancock	1,182	91.8	8.0	0.2
Hardy	543	92.6	7.2	0.2
Harrison	2,865	91.4	7.8	0.8
Jackson	1,335	92.1	7.3	0.6
Jefferson	2,281	91.3	7.9	0.8
Kanawha	7,824	88.4	10.9	0.7
Lewis	696	89.7	7.6	2.7
Lincoln	1,080	85.4	12.7	1.9
Logan	1,709	88.1	10.7	1.2
Marion	2,307	91.8	7.5	0.7
Marshall	1,319	90.8	8.8	0.4
Mason	1,251	88.6	10.3	1.1
McDowell	1,034	83.0	14.3	2.7
Mercer	2,583	89.1	10.6	0.3
Mineral	1,196	92.3	7.4	0.3
Mingo	1,291	83.7	14.9	1.4
Monongalia	2,832	90.9	8.3	0.8
Monroe	549	88.2	10.6	1.2
Morgan	661	90.5	8.2	1.3
Nicholas	1,173	91.0	8.2	0.8
Ohio	1,428	92.6	7.1	0.3

(continued)

Table B1. Average retention, attrition, and mobility rates among teachers in West Virginia public school districts, 2008/09–2012/13 (continued)

District	Average number of teachers	Average retention rate (percent)	Average attrition rate (percent)	Average mobility rate (percent)
Pendleton	333	90.4	8.1	1.5
Pleasants	409	87.3	11.0	1.7
Pocahontas	340	93.2	6.2	0.6
Preston	1,275	90.0	8.9	1.1
Putnam	2,552	93.6	6.0	0.4
Raleigh	3,233	91.2	8.1	0.7
Randolph	1,283	92.0	6.9	1.1
Ritchie	443	88.3	9.5	2.2
Roane	691	88.9	9.6	1.5
Summers	421	87.9	10.7	1.4
Taylor	612	91.0	7.5	1.5
Tucker	320	89.1	9.4	1.5
Tyler	426	89.0	9.6	1.4
Upshur	1,104	90.6	8.1	1.3
Wayne	2,053	91.2	8.3	0.5
Webster	452	88.7	9.3	2.0
Wetzel	833	90.3	7.8	1.9
Wirt	309	91.3	7.1	1.6
Wood	3,653	91.1	8.2	0.7
Wyoming	1,297	90.8	8.2	1.0

Note: Average number of teachers is presented as a reference. Percentages may not sum to 100 percent because of rounding.

Source: Authors' analysis based on teacher personnel data provided by the West Virginia Department of Education.

Table B2. Average retention, attrition, and mobility rates among administrators in West Virginia public school districts, 2008/09–2012/13

District	Average number of administrators	Average retention rate (percent)	Average attrition rate (percent)	Average mobility rate (percent)
Barbour	51	86.3	3.9	9.8
Berkeley	259	91.1	8.1	0.8
Boone	99	86.9	10.1	3.0
Braxton	53	77.4	15.1	7.5
Brooke	60	90.0	10.0	0.0
Cabell	213	89.7	9.4	0.9
Calhoun	28	82.1	10.7	7.2
Clay	44	86.4	13.6	0.0
Doddridge	26	88.5	11.5	0.0
Fayette	135	83.7	14.8	1.5
Gilmer	28	71.4	28.6	0.0
Grant	36	80.6	16.7	2.7
Greenbrier	94	85.1	14.9	0.0
Hampshire	56	83.9	14.3	1.8

(continued)

Table B2. Average retention, attrition, and mobility rates among administrators in West Virginia public school districts, 2008/09–2012/13 (continued)

District	Average number of administrators	Average retention rate (percent)	Average attrition rate (percent)	Average mobility rate (percent)
Hancock	80	92.5	6.3	1.2
Hardy	42	85.7	14.3	0.0
Harrison	181	88.4	10.5	1.1
Jackson	93	88.2	11.8	0.0
Jefferson	120	96.7	3.3	0.0
Kanawha	503	89.9	9.7	0.4
Lewis	44	90.9	6.8	2.3
Lincoln	69	69.6	27.5	2.9
Logan	138	88.4	11.6	0.0
Marion	134	85.8	13.4	0.8
Marshall	75	92.0	8.0	0.0
Mason	74	78.4	20.3	1.3
McDowell	77	66.2	31.2	2.6
Mercer	148	85.1	13.5	1.4
Mineral	89	88.8	11.2	0.0
Mingo	110	90.0	9.1	0.9
Monongalia	149	91.9	8.1	0.0
Monroe	31	67.7	25.8	6.5
Morgan	60	90.0	10.0	0.0
Nicholas	85	91.8	7.1	1.1
Ohio	87	90.8	9.2	0.0
Pendleton	23	91.3	4.3	4.4
Pleasants	39	87.2	5.1	7.7
Pocahontas	28	82.1	14.3	3.6
Preston	72	76.4	19.4	4.2
Putnam	169	94.1	5.9	0.0
Raleigh	183	89.1	10.4	0.5
Randolph	88	87.5	11.4	1.1
Ritchie	36	88.9	11.1	0.0
Roane	45	71.1	24.4	4.5
Summers	26	96.2	3.8	0.0
Taylor	43	81.4	9.3	9.3
Tucker	27	77.8	14.8	7.4
Tyler	24	91.7	8.3	0.0
Upshur	76	94.7	3.9	1.4
Wayne	148	87.2	12.2	0.6
Webster	29	79.3	17.2	3.5
Wetzel	56	80.4	17.9	1.7
Wirt	20	95.0	5.0	0.0
Wood	211	92.9	7.1	0.0
Wyoming	84	94.0	6.0	0.0

Note: Average number of administrators is presented as a reference. Percentages may not sum to 100 percent because of rounding.

Source: Authors' analysis based on administrator personnel data provided by the West Virginia Department of Education.

Appendix C. Cumulative attrition rates among beginning teachers in West Virginia public school districts

Table C1 provides cumulative attrition rates among beginning teachers in West Virginia public school districts for 2008/09–2012/13.

Table C1. Cumulative attrition rates among beginning teachers who left the West Virginia public school system, by district, 2008/09–2012/13

District	Number of beginning teachers	Cumulative attrition rate (percent) as of 2012/13 among beginning teachers first employed in a West Virginia public school district in:			
		2008/09	2009/10	2010/11	2011/12
Barbour	25	12.5	66.7	42.9	28.6
Berkeley	238	24.0	26.3	25.0	10.0
Boone	82	35.3	26.3	31.6	11.1
Braxton	34	20.0	40.0	35.7	40.0
Brooke	29	57.1	11.1	20.0	25.0
Cabell	157	41.9	40.7	38.3	15.4
Calhoun	27	66.7	22.2	50.0	20.0
Clay	22	40.0	0.0	37.5	25.0
Doddridge	a	a	a	a	a
Fayette	84	40.0	37.5	40.7	32.3
Gilmer	a	a	a	a	a
Grant	33	50.0	14.3	35.7	25.0
Greenbrier	69	27.3	20.0	13.6	0.0
Hampshire	54	25.0	20.0	18.8	31.3
Hancock	43	0.0	0.0	6.7	15.4
Hardy	12	50.0	20.0	33.3	0.0
Harrison	83	50.0	26.7	16.0	8.7
Jackson	36	25.0	25.0	55.6	14.3
Jefferson	105	26.1	21.1	35.7	30.8
Kanawha	278	50.0	59.0	43.8	9.5
Lewis	30	20.0	33.3	33.3	0.0
Lincoln	64	33.3	25.0	19.1	16.7
Logan	101	30.8	45.5	37.5	3.9
Marion	81	30.8	8.3	22.7	13.6
Marshall	25	60.0	33.3	7.1	0.0
Mason	65	34.8	68.8	40.0	50.0
McDowell	80	23.5	47.8	10.0	26.7
Mercer	97	62.1	20.0	27.8	10.0
Mineral	18	0.0	0.0	100.0	33.3
Mingo	108	25.0	33.3	53.9	22.2
Monongalia	107	38.5	40.0	13.3	7.7
Monroe	15	25.0	60.0	0.0	25.0
Morgan	30	40.0	12.5	0.0	50.0
Nicholas	39	35.7	25.0	20.0	14.3
Ohio	43	0.0	10.0	18.8	22.2
Pendleton	17	0.0	20.0	50.0	0.0

(continued)

Table C1. Cumulative attrition rates among beginning teachers who left the West Virginia public school system, by district, 2008/09–2012/13 (continued)

District	Number of beginning teachers	Cumulative attrition rate (percent) as of 2012/13 among beginning teachers first employed in a West Virginia public school district in:			
		2008/09	2009/10	2010/11	2011/12
Pleasants	a	a	a	a	a
Pocahontas	12	33.3	0.0	16.7	0.0
Preston	48	21.4	33.3	20.0	25.0
Putnam	71	0.0	20.0	20.0	4.6
Raleigh	121	29.4	46.4	23.5	8.0
Randolph	42	36.4	20.0	0.0	18.2
Ritchie	19	100.0	37.5	14.3	0.0
Roane	37	50.0	14.3	38.5	40.0
Summers	20	0.0	0.0	40.0	27.3
Taylor	22	0.0	60.0	25.0	16.7
Tucker	10	0.0	100.0	0.0	0.0
Tyler	19	50.0	25.0	50.0	11.1
Upshur	40	30.0	16.7	33.3	16.7
Wayne	112	19.2	38.5	17.2	5.6
Webster	25	0.0	33.3	33.3	28.6
Wetzel	32	0.0	30.0	11.1	0.0
Wirt	16	20.0	0.0	12.5	0.0
Wood	162	31.7	33.3	32.7	10.0
Wyoming	62	35.7	15.4	19.1	7.1

Note: The number of beginning teachers is presented as a reference and includes all beginning teachers employed within the district. The cumulative attrition rate was calculated by dividing the total number of beginning teachers who left the school district by 2012/13 by the total number of beginning teachers employed in the district as of the 2008/09, 2009/10, 2010/11, and 2011/12 academic years. When an attrition rate is listed as 0.0 percent, it means that none of the beginning teachers in that year had left by 2012/13.

a. Value suppressed to comply with privacy requirements.

Source: Authors' calculations based on teacher personnel data provided by the West Virginia Department of Education.

Note

1. The national rate of beginning-teacher mobility has been estimated at 13 percent, and the national rate of beginning-teacher attrition has been estimated at 7 percent (Goldring et al., 2014). However, a direct comparison between the current study and Goldring et al. (2014) is not possible because beginning teachers in that study were defined as those with up to three years of experience, and the dataset for the current study did not account for teachers who left West Virginia public schools but may have gone on to teach in another state or in West Virginia private schools.

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