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# THE SUPPLY AND DEMAND FOR RURAL TEACHERS

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## • TABLE OF CONTENTS •

ACKNOWLEDGEMENTS.....	<b>i</b>
INTRODUCTION.....	<b>1</b>
DATA AND METHODS.....	<b>3</b>
TALENT RECRUITMENT AND RETENTION.....	<b>5</b>
TEACHER DEMAND.....	<b>6</b>
VACANCIES.....	<b>8</b>
SUMMARY.....	<b>11</b>
PERSONNEL CHARACTERISTICS.....	<b>12</b>
TEACHER TRAINING AND CERTIFICATION.....	<b>12</b>
ADVANCED DEGREES AND EXPERIENCE.....	<b>15</b>
TEACHER DEMOGRAPHICS.....	<b>16</b>
SUMMARY.....	<b>17</b>
WORK ENVIRONMENTS.....	<b>18</b>
PROFESSIONAL DEVELOPMENT.....	<b>18</b>
TEACHER INFLUENCE AND CONTROL.....	<b>21</b>
TEACHER SATISFACTION.....	<b>23</b>
SUMMARY.....	<b>23</b>
DISCUSSION.....	<b>25</b>
BIBLIOGRAPHY.....	<b>28</b>

## • ACKNOWLEDGEMENTS •

The Rural Opportunities Consortium of Idaho (ROCI) was launched by the J.A. and Kathryn Albertson Foundation of Boise, Idaho during the summer of 2013. Since then, Bellwether Education Partners and a task force of experts led by Dr. Paul T. Hill have been working to foster a better understanding of the issues that affect rural education, inform policy discussions, and bring attention to the unique needs and circumstances of rural school children. A series of reports, published over the next year, will examine issues including migration, technology, human capital, economic development, postsecondary enrollment and persistence, and more. Papers will be posted online at [www.rociidaho.com/research-publications](http://www.rociidaho.com/research-publications).

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ROCI brings together some of the nation’s best thinkers to conduct research on the challenges of rural education and identify innovations, programs, and models to address them. This effort informs a national body of work on rural education and explores implications for increasing the educational attainment and economic competitiveness of Idahoans and Americans.

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## • INTRODUCTION •

Much of the research on teacher labor markets over the past several decades has focused on urban schools and districts. In particular, several studies have focused on the plight of urban schools in attracting and retaining highly talented teachers and leaders (Lankford, Loeb, & Wyckoff, 2002).

Less well understood are the constraints and challenges rural schools face when it comes to competition for highly talented teachers (Arnold, Newman, Gaddy, & Dean, 2005). Indeed, some feel the structure of federal reform assistance has largely ignored the plight of rural schools (Jimerson, 2005). However, rural schools potentially share many of the same challenges as urban schools, and some of the challenges may be even more pronounced for rural schools: they are often in isolated communities with fewer qualified candidates (Monk, 2007); young people may find it relatively less appealing to live in areas with fewer amenities associated with urban or suburban communities (Miller, 2008); and rural schools may afford less teacher specialization and consequently require teachers to teach more out-of-subject courses (Hammer, Hughes, McClure, Reeves, & Salgado, 2005).

Some aspects of teaching in rural settings may make them more desirable than urban or suburban settings. For instance, rural teachers may have the opportunity to connect with students, parents, and the community in a way not afforded by urban and suburban settings (Bauch, 2001; Boylan & McSwan, 1998). Rural communities often have lower costs of living (Rudzitis, 1999) and greater access to outdoor amenities (McGranahan, Wojan, & Lambert, 2010), allowing a better overall quality of life.

Before we can begin to understand how to improve rural schools to better prepare students for the challenges of the 21st century, we must first understand the situation in rural schools: whether it differs and how it differs from more widely studied urban and suburban schools. Much of the work on urban and suburban schools has been within a specific urban or suburban district or group of districts. Likewise, much of the work that has been done on rural teachers has focused just on rural districts at the exclusion of other school types. The purpose of this paper is to summarize what we know about the current state of rural teacher labor markets by contrasting them with the same data from urban, suburban, and large and small town settings.

Using nationally representative data collected over the past 15 years, I summarize the differences and similarities between rural and non-rural schools and teachers. Because rural schools are not homogenous, I also break out rural schools by their remoteness and make comparisons across rural types. Finally, the comparisons are also made with rural schools in Idaho, which is a state of particular interest for this project.

I begin by describing the structure of rural and non-rural schools, in terms of the frequency of vacancies and the difficulty rural schools report in filling those vacancies. I then summarize the teacher workforce in rural and non-rural schools and some aspects of their reported working conditions. Finally, I summarize rural teachers' reported satisfaction with teaching, contrast it with the satisfaction of teachers from other settings, and offer discussion and recommendations that flow from the findings.

## • DATA AND METHODS •

The data used in this paper are drawn from the Schools and Staffing Survey (SASS), a nationally representative survey administered periodically by the National Center for Education Statistics. Because any particular year of the survey might be influenced by the context of that year (e.g., the Great Recession or short-term responses to major policy shifts), I pool the data for the last four waves of the SASS that span nearly 15 years (1999, 2003, 2007, 2011). In the case of teacher satisfaction analysis, I use just the most recent wave of the data because the questions were not consistent across all four waves of the survey.

For the purposes of this paper, I use the urban-centric locale codes derived from the US Census Bureau that divide schools into four mutually exclusive categories: urban, suburban, town, and rural. Urban schools are located within the limits of a city with a population of at least 100,000. Suburban schools are located in urbanized territories outside the limits of urban areas. Town schools are located in urban clusters that are less than 35 miles from urban areas. Rural schools are located in census-defined rural territories that are located at least five miles from an urban area and/or at least 2.5 miles from an urban cluster (town).

Each census designation is further subdivided into three distinct subcategories. In the case of rural schools, they are designated as either rural fringe (rural areas less than five miles from an urban area); rural distant (rural areas located 5-25 miles from an

urban area), or rural remote (rural areas at least 25 miles from an urban area) (Common Core of Data (CCD), n.d.). Because these codes were not used until the 2007 wave of the SASS, I use the designations as of the NCES Common Core of Data 2006 to code schools from earlier waves of the SASS. Not all schools match, likely because some schools were eliminated or consolidated prior to 2006. For nonmatching schools, I assign the modal urban code of all other schools in their district.

All statistics presented in this paper are weighted to make them nationally representative. Most reported statistics are simply the weighted averages of reported responses. Throughout the document, I employ Ordinary Least Squares (OLS) regression to identify statistical significance based on a two-tailed test with rural and rural fringe serving as the reference groups. In a few cases described in the sections below, I also use OLS regression to control for factors such as teacher experience that could influence differential responses across the urban settings.

When reporting on subject-level vacancies, all statistics are reported contingent upon the school reporting that it had a position in that field. For example, the vacancy rate for elementary teachers includes only those schools with elementary grades.

## • TALENT RECRUITMENT AND RETENTION •

Rural and remote rural areas have lower college-going rates than urban or suburban areas (Bauch, 2001). Therefore, fewer people who grow up in rural areas are qualified to become teachers. Prior research from New York State demonstrated that teachers prefer to work close to where they attended high school, and prefer areas with characteristics similar to their hometown (Boyd, Lankford, Loeb, & Wyckoff, 2005). For instance, researchers found that nearly 90 percent of elementary school teachers locate less than 40 miles from their home, and teachers who grew up in an urban environment were much more likely to be teaching

**The fact that rural areas produce fewer people who are qualified to become teachers, combined with the fact that teachers tend to prefer not to leave the settings in which they grew up, creates the potential for a significant lack of available teachers in rural areas.**

in an urban setting than in a suburban or rural setting. The same preferences were shown to be true for suburban and rural teachers. The fact that rural areas produce fewer people who are qualified to become teachers, combined with the fact that teachers tend to prefer not to leave the settings in which they grew up, creates the potential for a significant lack of available teachers in rural areas.

While rural areas may face a reduced supply of teacher applicants, a thorough analysis must also account for the demand for teachers. If teachers from rural communities turn over at lower rates, as has been found in prior research (Ingersoll, 2001), the demand for replacement teachers is reduced and the supply of replacement teachers is of less concern. While the SASS does not allow a thorough analysis of the supply and demand for teachers, below I describe patterns of teacher vacancies and the reported difficulty of filling those vacancies.

## TEACHER DEMAND

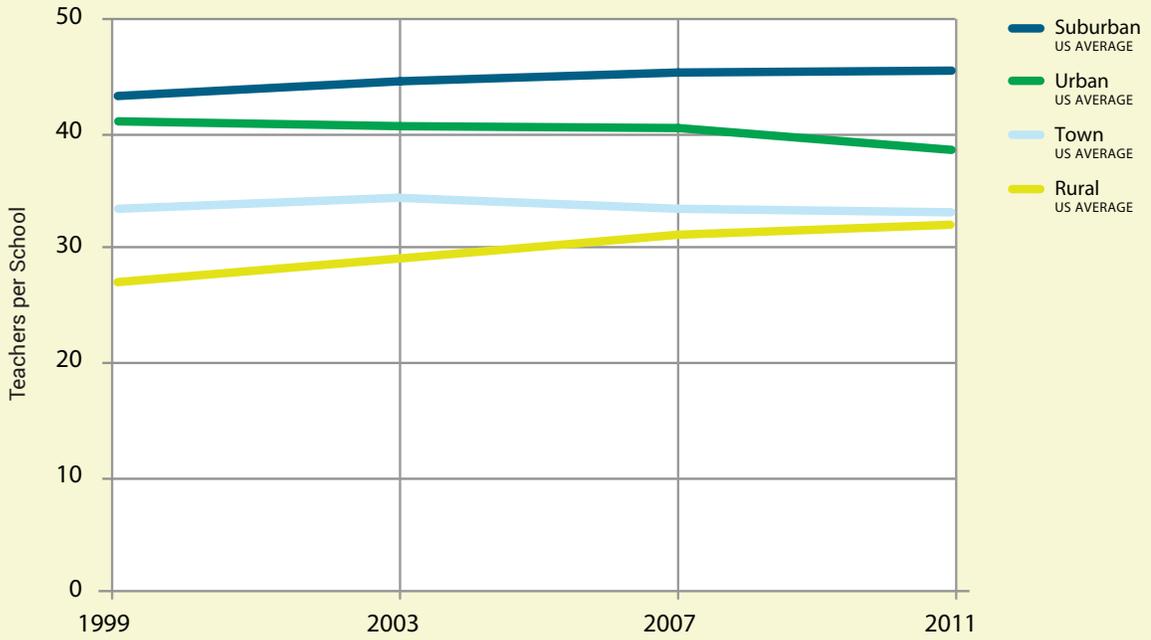
Perhaps unsurprisingly, rural schools employ fewer teachers than their urban, suburban, and town counterparts. Over the past four waves of the SASS, rural schools have consistently employed fewer teachers than any other school type (**Figure 1A**). However, during that period rural schools have grown more than any other school type, increasing from roughly 27 teachers per school to more than 32 teachers per school, an average growth of more than 18 percent. In contrast, non-rural schools experienced, on average, zero growth in teacher employment over that period.

When broken out by rural type, rural schools that are more remote have fewer teachers than rural schools that are closer to urban centers (**Figure 1B**). Remote rural schools employ fewer than half the teachers of fringe rural schools—or the rural schools closest to urban centers—in nearly every year of the SASS. Remote rural schools grew over the period at roughly the same rate as fringe schools (approximately 12 percent). When coupled with the overall changes in rural school sizes, the relatively smaller changes within rural areas suggest that there may have been a change in the overall composition of rural schools over time, with fewer schools being classified as remote and more being classified as distant and fringe. Interestingly, rural schools from Idaho have fewer teachers on average than every type of rural school. This is particularly remarkable because this includes Idaho schools of every rural type (fringe, distant, remote). To illustrate, in 2011 the average rural Idaho school (19.1 teachers) was smaller than the average remote rural school in the country (19.5 teachers).

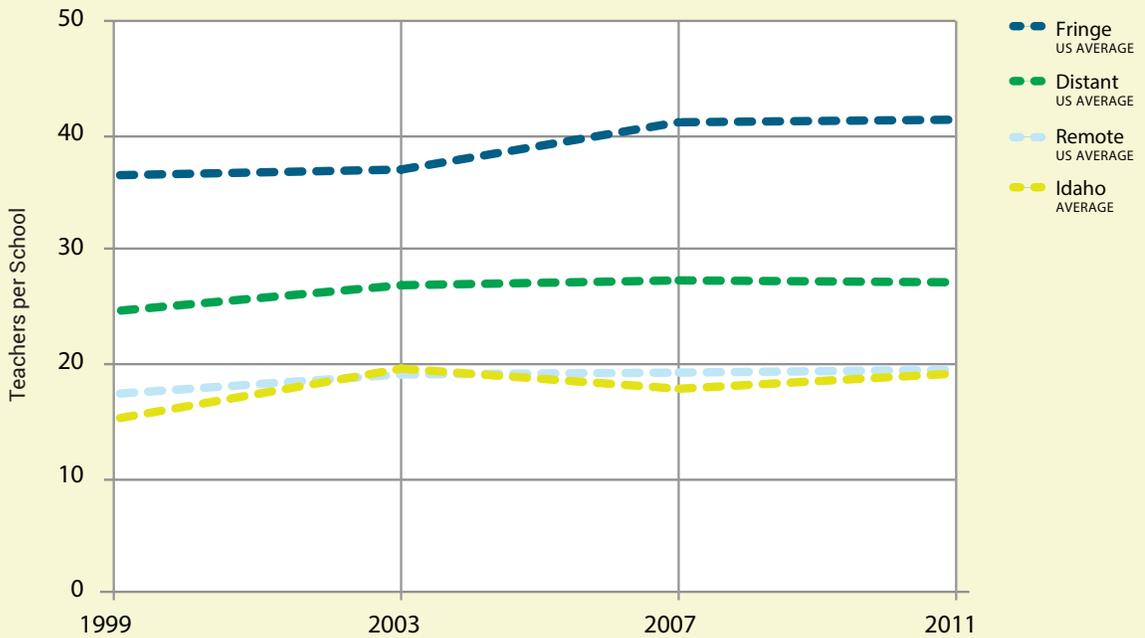
• Figure 1 •

### TEACHING POSITIONS PER SCHOOL BY URBANICITY

A



B



Source: 1999, 2003, 2007, 2011 Schools and Staffing Survey—Public School Survey

## VACANCIES

One important indicator of the teacher job market is the frequency with which schools report teacher vacancies. Do rural schools experience teacher vacancies at different rates than non-rural schools? Overall, fewer rural schools (73 percent) reported at least one teacher vacancy than their urban (76 percent), suburban (78 percent), and town (76 percent) counterparts. However, rural schools employ fewer teachers than non-rural schools, so fewer vacancies might be expected. After controlling for the number of teachers employed by the school, there are no statistically significant differences, on average, between rural schools and their non-rural counterparts in the likelihood of having a vacant position in a given year (**Figure 2A**). In other words, there is little evidence to suggest that rural schools experience teacher vacancies with greater or less frequency than is experienced in non-rural schools of similar size.

Overall vacancy rates could mask important differences in the types of teachers who must be replaced. Across the four years of the SASS, rural schools were consistently less likely than urban and suburban schools to have an elementary teacher vacancy or an English Language Learner (ELL) teacher vacancy. The opposite is true for science, technology, engineering, or math (STEM) fields; rural schools are often more likely than urban or suburban schools to have a vacancy in a STEM field.

The frequency of vacancies is of less concern if the rural schools face greater challenges in filling vacancies when they do occur. Fortunately, schools in the SASS also reported on how difficult it was to fill vacancies in various fields. One might expect rural schools to face greater difficulty finding replacements when they experience a vacancy because of the smaller pool of potential teachers. However, rural schools with

**However, rural schools with at least one vacancy were no more likely than urban or suburban schools to report having difficulty in filling that vacancy.**

at least one vacancy were no more likely than urban or suburban schools to report having difficulty in filling that vacancy. Rural schools were statistically more likely to report difficulty than schools located in towns (**Figure 2A**), although the differences are small. The fact that rural schools faced roughly the same difficulty as urban and suburban schools

is somewhat surprising given the perceived constraints that rural districts face with a restricted applicant pool. Overall, about one-third of schools reported difficulty filling positions, regardless of urbanicity.

• Figure 2 •

## PERCENTAGE OF SCHOOLS REPORTING VACANCIES AND DIFFICULTY FILLING VACANCIES BY TEACHER FIELD

■ Indicates statistically different from rural at  $p < .05$    ■ Indicates statistically different from remote at  $p < .05$

A

By General Urbanicity (All Schools)	Urban US AVERAGE	Suburban US AVERAGE	Town US AVERAGE	Rural US AVERAGE
Vacancy in Any Subject	72.4%	72.8%	74.9%	73.1%
Elementary Vacancy	88.4%	87.4%	84.4%	82.9%
STEM Vacancy	58.8%	56.1%	61.1%	62.5%
ELL Vacancy	38.5%	29.3%	29.9%	22.4%
Difficulty: Any Subject	34.4%	31.1%	30.2%	32.7%
Difficulty: Elementary Vacancy	6.5%	2.9%	2.7%	3.6%
Difficulty: STEM Vacancy	36.3%	32.0%	29.7%	34.4%
Difficulty: ELL Vacancy	24.0%	28.9%	33.8%	39.5%
<b>Unweighted N</b>	<b>6800</b>	<b>7050</b>	<b>7050</b>	<b>11190</b>

B

By Rural Type (Restricted to Rural Schools)	Idaho AVERAGE	Fringe US AVERAGE	Distant US AVERAGE	Remote US AVERAGE
Vacancy in Any Subject	68.8%	66.3%	69.6%	67.3%
Elementary Vacancy	79.1%	86.6%	81.1%	77.6%
STEM Vacancy	69.8%	57.0%	56.2%	61.2%
ELL Vacancy	28.5%	24.4%	15.7%	20.5%
Difficulty: Any Subject	34.7%	32.4%	31.7%	38.8%
Difficulty: Elementary Vacancy	3.4%	3.9%	3.1%	4.3%
Difficulty: STEM Vacancy	31.8%	33.3%	31.5%	43.9%
Difficulty: ELL Vacancy	44.1%	38.2%	41.3%	43.3%
<b>Unweighted N</b>	<b>260</b>	<b>4290</b>	<b>3700</b>	<b>3200</b>

Sample sizes rounded to nearest 10 to comply with NCES data reporting rules.

*Note:* Vacancy rate is contingent upon having a position in the field and controls for total number of teachers in the school. Difficulty rate is contingent upon having a reported vacancy in the field.

*Source:* 1999, 2003, 2007, 2011 Schools and Staffing Survey—Public School Survey

Not all positions were equally difficult to fill. For example, rural schools reported relatively less difficulty filling elementary positions than their urban counterparts, and they were no different from suburban or town schools when it came to filling those positions. However, few schools reported difficulty filling elementary positions **(Figure 2A)**. Rural schools were also comparable to urban and suburban schools in the difficulty of filling STEM positions and had slightly more difficulty than town schools. Overall, a much greater percentage of schools reported difficulty filling STEM vacancies than elementary positions. Finally, rural schools reported significantly more difficulty than either urban or suburban schools in filling ELL positions. The difference in ELL difficulty is quite striking when rural schools are compared with urban schools. Rural schools report difficulty hiring ELL teachers at a rate more than 60 percent greater than urban schools.

When the same analyses were conducted for the different degrees of rurality, similar patterns emerged **(Figure 2B)**. Notably, remote rural schools were no more likely than other rural schools to have a vacancy. However, remote schools were more likely than other rural schools to express difficulty filling a vacancy. This is perhaps evidence

**Remote rural schools were no more likely than other rural schools to have a vacancy. However, remote schools were more likely than other rural schools to express difficulty filling a vacancy.**

of a restricted labor pool.

The only statistically significant differences in the difficulty of hiring were in STEM fields; remote rural schools had more difficulty filling STEM positions than other rural schools.

Idaho's rural schools were more likely than other rural schools to experience STEM vacancies, although they reported less difficulty than remote schools in filling those positions. Idaho's rural schools largely tracked national patterns for rural fringe and distant schools.

## SUMMARY

Rural schools reported relatively fewer vacancies than non-rural schools, but this was likely because they employ fewer teachers overall. After accounting for the size of the workforce, rural schools faced roughly the same vacancy rate as non-rural schools. Rural schools face vacancies in STEM at greater rates than urban or suburban schools, but they report roughly the same degree of difficulty filling a STEM position as non-rural schools. Rural schools report ELL vacancies at lower rates than urban schools, but these vacancies are much more difficult to fill in rural schools than in urban schools.

On the whole, rural schools express difficulty filling positions with approximately the same frequency as non-rural schools. There is some evidence that the most remote rural schools had more difficulty filling positions, but overall fewer than half of rural schools with a vacancy reported difficulty filling the position.

## • PERSONNEL CHARACTERISTICS •

Teachers are the most important school-related factor that contributes to student learning (Rivkin, Hanushek, & Kain, 2005), and emerging empirical evidence suggests that a teacher's influence lasts far beyond the students' time in his or her class (Chetty, Friedman, & Rockoff, 2013). Much of the quality of rural education is best understood by examining the teachers in rural schools. This section summarizes the demographic and professional background characteristics of teachers in rural schools and contrasts those with the teachers from their non-rural counterparts.

### TEACHER TRAINING AND CERTIFICATION

Few readily observable teacher characteristics are consistently correlated with student achievement. One exception, the selectivity of the teacher's undergraduate institution, has been correlated positively with student achievement (Wayne & Youngs, 2003), and prior research has found that rural teachers are less likely than non-rural teachers to have graduated from selective colleges (Gibbs, 2000). However, labor markets are dynamic, and the implementation of NCLB and other reforms may have changed the composition of the teacher labor market since these studies were conducted. In this section, I examine the selectivity of teachers' undergraduate institutions from each urban category to determine whether this is still true of rural schools. I also look at other teacher characteristics that could be proxies for important teacher characteristics.

Across the four years of the SASS, rural teachers were less likely to have graduated from a selective college than their urban and suburban counterparts (**Figure 3A**). There is no appreciable positive trend over the four waves of the SASS (not shown), indicating that reform efforts have not changed this aspect of the teacher workforce in rural schools. By itself, this might not be very troubling since college selectivity is only loosely related to

**As schools become more remote, they have fewer teachers who graduated from selective colleges.**

teacher quality. However, the pattern is also consistent with recent research that has found lower academic aptitude, measured in terms of test scores, among rural teachers in Kentucky (Fowles, Butler, Cowen, Streams, & Toma, 2013). As schools become more remote, they

have fewer teachers who graduated from selective colleges (**Figure 3B**). Rural schools in Idaho have fewer teachers from selective colleges than any of the rural classifications nationwide. This could reflect the number of selective colleges in Idaho.

Over the last two decades, there has been an increase in the number of alternative certification programs in which teachers are able to begin teaching without completing a traditional teacher certification program as part of a bachelor's or master's degree program (Peterson & Nadler, 2009). While some express concerns about the quality of teachers from alternative certification programs (Darling-Hammond, Berry, & Thoreson, 2001; Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005), recent research has largely found them to be as effective as, and sometimes more effective than, traditionally certified teachers in the schools in which they work (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009; Constantine et al., 2009; Goldhaber & Brewer, 2000; Sass, 2011). In light of emerging evidence, some have held out hope for alternative certification as a way to address the needs of rural schools (Brownell, Bishop, & Sindelar, 2005).

While there has been an overall trend of increased alternative certification teachers over the four waves of the SASS, on the whole a smaller percentage of rural teachers than urban or suburban teachers were alternatively certified (**Figure 3A**). Trends over time are increasing across all categories of urbanicity, suggesting that rural schools are increasing the percentage of alternatively certified teachers at roughly the same rate as non-rural schools. However, alternative certification teachers are currently being employed in rural schools at lower rates than they are in urban or suburban schools. Remote rural schools hire the fewest, and Idaho rural schools employ fewer alternatively certified teachers than the average remote rural school.

## CHARACTERISTICS OF TEACHERS

• Figure 3 •

■ Indicates statistically different from rural at  $p < .05$  ■ Indicates statistically different from remote at  $p < .05$

A

By General Urbanicity (All Schools)	Urban US AVERAGE	Suburban US AVERAGE	Town US AVERAGE	Rural US AVERAGE
Selective College	17.6%	22.3%	13.0%	14.4%
Alternative Certification	12.9%	9.6%	8.0%	8.9%
Master's Degree	49.4%	55.3%	47.4%	45.2%
Years of Experience	13.8	13.9	14.9	14.2
Novice	15.8%	14.5%	13.3%	14.9%
Black	14.1%	6.3%	4.3%	4.4%
Hispanic	10.7%	6.3%	4.4%	3.8%
<b>Unweighted N</b>	<b>35610</b>	<b>37970</b>	<b>26770</b>	<b>52880</b>

B

By Rural Type (Restricted to Rural Schools)	Idaho AVERAGE	Fringe US AVERAGE	Distant US AVERAGE	Remote US AVERAGE
Selective College	5.3%	16.1%	12.6%	9.7%
Alternative Certification	4.8%	9.7%	7.2%	6.6%
Master's Degree	25.5%	46.8%	44.5%	37.0%
Years of Experience	13.3	13.9	14.4	15.1
Novice	15.9%	15.2%	15.1%	14.4%
Black	0.2%	4.8%	4.2%	3.4%
Hispanic	2.5%	5.2%	1.8%	2.6%
<b>Unweighted N</b>	<b>1260</b>	<b>22400</b>	<b>16490</b>	<b>14000</b>

Sample sizes rounded to nearest 10 to comply with NCES data reporting rules.

Source: 1999, 2003, 2007, 2011 Schools and Staffing Survey—Public Teacher Survey

## ADVANCED DEGREES AND EXPERIENCE

One commonly used measure for teacher quality and level of professionalism is the teacher's experience level and whether he or she holds a master's degree. While there is very little empirical support for the view that teachers with master's degrees outperform teachers without them, it is nevertheless used as a measure of quality, as highlighted by the fact that states and districts pay higher salaries to teachers who hold the degree.

**Rural teachers are less likely to hold a master's degree than teachers from any other locale despite the fact that they are slightly more experienced, on average, than teachers from urban and suburban settings.**

Rural teachers are less likely to hold a master's degree than teachers from any other locale despite the fact that they are slightly more experienced, on average, than teachers from urban and suburban settings. In comparison with suburban teachers, for example, rural teachers are more than 20 percent (roughly 10 percentage points) less likely to hold a

master's degree. It is not clear what drives these differences. It could reflect differential access to master's degree programs, differences in the policies of states with relatively fewer or more rural schools, or simply teacher preferences. Whatever the cause, the net result is fewer master's degrees among rural teachers.

The prevalence of master's degrees falls as schools become more remote (**Figure 3B**). Fewer than 40 percent of remote rural teachers hold a master's, compared with more than 46 percent of teachers in rural fringe schools. Teachers in Idaho's rural schools hold fewer master's degrees than their counterparts in any of the other classifications of rural schools, and the difference is relatively large.

Teacher experience has been shown to influence teacher effectiveness, but typically only in the first several years of teaching (Rockoff, 2004). Another useful measure of teacher experience is the percentage of teachers who are in their first three years of teaching. If rural teachers tended to turn over in their first few years, either due to unexpected challenges of working in rural environments or because of programs such as Teach For America that do not emphasize long-term teaching commitments, we would expect to see a disproportionate number of rural schools being staffed with novice teachers. However, rural schools have fewer novice teachers than urban schools and more than town schools, and are statistically indistinguishable from suburban schools. Thus, it does not appear that rural schools have a greater reliance on novice teachers than non-rural schools.

## TEACHER DEMOGRAPHICS

Matches between a teacher's race and her student's race have been shown to have a positive impact on student achievement through a hypothesized mentor effect (Dee, 2004). Because rural areas have experienced demographic shifts over the past decade (Monk, 2007), it is worth examining the demographics of the teacher labor force to see how they differ across locales and whether rural students appear to be at a disadvantage in having a teacher of the same race or ethnicity.

Rural schools have fewer black teachers, on average, than all other urban categories. The difference is most pronounced when compared with urban schools, which hire four times as many black teachers on average. However, this trend could reflect differences in the

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population between urban and rural areas. For example, if rural areas have fewer black residents among the population then it is natural that fewer would be teaching in schools. After including a simple control for the percentage of the student body that is black American, rural schools actually employ a statistically greater percentage of black teachers than their suburban and town counterparts. While they still employ fewer black teachers than urban schools, this finding suggests that there are more black student-

teacher matches in rural schools than are found in town or suburban schools. Indeed, these positive race matches among black students and teachers have seen the largest positive impacts (Dee, 2004).

The same analysis was conducted for Hispanic teachers and found very similar results. In terms of simple means, rural areas employ a smaller percentage of Hispanic teachers than do any of the other school types. However, after accounting for the Hispanic population among the student body, rural schools employ greater percentages of Hispanic teachers than suburban or town schools, and they are statistically indistinguishable from urban schools. This again implies that there are more Hispanic student-teacher matches in rural schools than in suburban or town schools.

## SUMMARY

Teachers in rural areas differ from non-rural teachers in meaningful ways. One possible area of concern is that teachers from rural areas are less likely to have graduated from selective colleges than non-rural teachers, and are less likely to hold a master's degree despite being slightly more experienced on average. This could indicate a lower average teacher quality or it could simply be an artifact of the policies that drive teacher selection. The rural teacher workforce appears to be slightly more racially and ethnically diverse than would be expected given the population of students they serve.

## • WORK ENVIRONMENTS •

Like any workers, teachers are sensitive to work environments and are more likely to leave environments in which they are unhappy (Hanushek, Kain, & Rivkin, 2004). While the decision to stay or leave a school is influenced by school characteristics such as the composition of the student body and the conditions of the school building, recent research has shown that teachers' perceptions of leadership, including their personal empowerment, are more predictive of their intent to stay or leave (Ladd, 2011). This section contrasts working environments in rural and non-rural schools to examine whether there are systematic differences in perceived work environments. In contrast to prior sections, the data from this section are drawn only from the 2011 wave of the SASS because of a number of differences in how the questions were asked across years.

### PROFESSIONAL DEVELOPMENT

Rural teachers may have fewer opportunities to receive professional development than their non-rural counterparts (Hammer et al., 2005) for two reasons. First, they may have less access to university-sponsored or other third-party professional development conferences or workshops due to their distance from urban centers. Second, rural school districts may be less likely to sponsor professional development opportunities because it may be prohibitively costly for smaller or geographically dispersed districts to offer the types of professional development available to large or dense districts. If either were true, we might expect rural teachers to have fewer opportunities to develop their professional skills which some teachers would see as a disadvantage to their jobs (Hammer et al., 2005). Unfortunately, we cannot directly observe the professional development opportunities that were available to teachers, but the SASS asked teachers to report the professional development they participated in during the previous year.

Although more than 80 percent of rural teachers participated in professional development in their subject, this was statistically less than teachers in urban and suburban schools (**Figure 4A**). Fewer rural teachers participated in professional development related to computers for instruction than did suburban teachers, but they were not statistically different from teachers in urban or town schools. Rural teachers were the least likely of all teachers to have participated in professional development related to strategies dealing with ELL students. In the case of the urban comparison, the difference is quite large: more than twice as many urban teachers participated than rural teachers. It is not clear whether this is due to differences in need for this type of professional development or simply availability. Interestingly, there were no differences between rural teachers and other teachers in the reported participation in university-sponsored professional development. Thus, it does not appear that distance from urban centers prevented rural teachers from participating in this type of professional development at the same rate as other teachers.

Looking across rural types, the differences between rural and non-rural teachers appear to be driven primarily by remote and distant rural schools. Teachers in fringe rural schools appear to participate in professional development at rates closer to those of suburban and urban schools.

**More than three quarters of Idaho teachers report participating in university-sponsored professional development, in contrast to 26-35 percent of teachers in other rural places. Likewise, about twice as many of Idaho's rural teachers received professional development in ELL strategies than remote and distant rural teachers.**

Rural teachers in Idaho participate at rates lower than other rural teachers with the exception of ELL professional development and university-sponsored professional development. More than three quarters of Idaho teachers report participating in university-sponsored professional development, in contrast to 26-35 percent of teachers in other rural places. Likewise, about twice as many of Idaho's rural teachers received professional development in ELL strategies than remote and distant rural teachers.

• Figure 4 •

## REPORTED PROFESSIONAL DEVELOPMENT PARTICIPATION

■ Indicates statistically different from rural at  $p < .05$  ■ Indicates statistically different from remote at  $p < .05$

A

By General Urbanicity (All Schools)	Urban US AVERAGE	Suburban US AVERAGE	Town US AVERAGE	Rural US AVERAGE
PD in Own Subject	87.4%	85.9%	82.0%	82.2%
PD in Computers for Instruction	65.1%	69.3%	66.9%	67.0%
PD in ELL Strategies	38.2%	25.8%	21.6%	18.3%
PD in Discipline Strategies	46.4%	40.1%	41.7%	41.7%
University-Sponsored PD	25.6%	27.2%	28.5%	27.1%
<b>Unweighted N</b>	<b>8140</b>	<b>10290</b>	<b>6180</b>	<b>12900</b>

B

By Rural Type (Restricted to Rural Schools)	Idaho AVERAGE	Fringe US AVERAGE	Distant US AVERAGE	Remote US AVERAGE
PD in Own Subject	76.4%	83.7%	80.7%	78.3%
PD in Computers for Instruction	54.7%	68.5%	63.9%	67.3%
PD in ELL Strategies	24.0%	22.7%	12.4%	12.7%
PD in Discipline Strategies	34.9%	40.8%	42.9%	42.8%
University-Sponsored PD	75.7%	26.7%	26.4%	34.6%
<b>Unweighted N</b>	<b>260</b>	<b>6400</b>	<b>3840</b>	<b>2650</b>

Sample sizes rounded to nearest 10 to comply with NCES data reporting rules.

Source: 2011 Schools and Staffing Survey—Public Teacher Survey

## TEACHER INFLUENCE AND CONTROL

Teachers who feel more influence and autonomy in their jobs tend to report greater job satisfaction (Pearson & Moomaw, 2005). The SASS asked teachers to report their perceived influence over school policies and their autonomy (control) over certain aspects of their classroom teaching. I examine whether rural teachers report systematically greater influence and control than their non-rural counterparts. In each of these tabulations, I control for teacher experience since it could affect the perceived level of influence regardless of the school setting.

On the whole, there is some evidence that rural teachers feel more influence in their schools than urban and suburban teachers (**Figure 5A**). This pattern persists as schools become more remote (**Figure 5B**). The percentage of rural teachers reporting at least moderate influence over setting performance standards and establishing curriculum is significantly higher than it is among urban or suburban teachers. There were no statistically significant differences across any of the school types in the level of influence over teacher evaluation or teacher hiring. Rural teachers reported less

**Rural teachers consistently reported greater control over texts, course content, and teaching techniques than suburban or urban teachers.**

influence over deciding how the budget was to be spent than did urban teachers, but they reported more influence than teachers in towns. The percentage of teachers who reported at least moderate influence in the budget is rather low across all settings.

When it came to autonomy in their own classrooms, rural teachers consistently reported greater control over texts, course content, and teaching techniques than suburban or urban teachers. Some of the differences were quite large. For example, nearly 33 percent more rural teachers reported at least moderate control over choosing classroom texts than did urban teachers. Overall, the differences appear to be largely driven by teachers in distant and remote schools. Classroom autonomy may be seen as a significant advantage of teaching in a rural setting, although its impact on rural students is less clear.

• Figure 5 •

### PERCENT OF TEACHERS WHO REPORT AT LEAST MODERATE INFLUENCE (OR CONTROL)

■ Indicates statistically different from rural at  $p < .05$    ■ Indicates statistically different from remote at  $p < .05$

A

By General Urbanicity (All Schools)	Urban US AVERAGE	Suburban US AVERAGE	Town US AVERAGE	Rural US AVERAGE
<b>Influence at School</b>				
Setting Performance Standards	51.0%	53.0%	54.7%	56.0%
Establishing Curriculum	47.8%	56.4%	59.3%	60.6%
Content of PD	43.5%	46.1%	41.1%	44.9%
Evaluating Teachers	14.6%	14.4%	15.4%	15.7%
Hiring New Teachers	23.9%	21.8%	25.2%	23.4%
Deciding how budget is spent	19.1%	15.4%	14.3%	16.5%
<b>Control in Classroom</b>				
Classroom Texts	47.8%	53.2%	63.8%	62.0%
Classroom Content	53.0%	56.1%	61.6%	63.2%
Teaching Techniques	88.1%	91.3%	91.9%	93.3%
<b>Unweighted N</b>	<b>8140</b>	<b>10290</b>	<b>6180</b>	<b>12900</b>

B

By Rural Type (Restricted to Rural Schools)	Idaho AVERAGE	Fringe US AVERAGE	Distant US AVERAGE	Remote US AVERAGE
<b>Influence at School</b>				
Setting Performance Standards	52.5%	52.9%	59.1%	62.2%
Establishing Curriculum	61.9%	56.9%	63.8%	69.6%
Content of PD	35.1%	42.5%	47.2%	49.9%
Evaluating Teachers	15.8%	13.8%	17.9%	17.7%
Hiring New Teachers	37.9%	22.8%	24.1%	24.2%
Deciding How Budget Is Spent	9.6%	16.6%	17.2%	13.4%
<b>Control in Classroom</b>				
Classroom Texts	58.8%	56.4%	68.0%	75.7%
Classroom Content	64.1%	58.0%	67.6%	76.9%
Teaching Techniques	93.4%	92.0%	94.5%	95.6%
<b>Unweighted N</b>	<b>260</b>	<b>6400</b>	<b>3840</b>	<b>2650</b>

Sample sizes rounded to nearest 10 to comply with NCES data reporting rules.

Source: 2011 Schools and Staffing Survey—Public Teacher Survey

## TEACHER SATISFACTION

The SASS asked a number of questions to gauge teachers' satisfaction with their current job and their plans to stay in or leave the teaching profession. Overall, the picture is a positive one for rural teachers. They are more likely than urban or town teachers to strongly agree with the statement that their school is well run (**Figure 6A**). Rural teachers are also more likely than urban or town teachers to strongly agree that they are generally satisfied with their job and that they believe others to be satisfied. Overall, only a small percentage of teachers report that they are satisfied with their salary. However, rural teachers are slightly less likely to report satisfaction with their salary than suburban teachers. This is perhaps not surprising since rural teachers, after accounting for degree and experience level, earn an average of \$10,000 less than their suburban counterparts. Despite their relatively high general satisfaction with their jobs, more rural teachers than suburban or town teachers strongly agree that they would leave their job as soon as possible if they were able to secure a better-paying position.

**Few teachers report being satisfied with their salaries, but Idaho's rural teachers were much less likely than others to report satisfaction. Fewer than two percent of Idaho's rural teachers report being satisfied, compared with approximately 10 percent of other rural teachers.**

Few teachers report being satisfied with their salaries, but Idaho's rural teachers were much less likely than others to report satisfaction. Fewer than two percent of Idaho's rural teachers report being satisfied with their salaries, compared to approximately 10 percent of other rural teachers. Idaho's salaries

are also much lower than those of the other rural teachers in the sample. They earn, on average, around \$4,000 less than remote rural teachers with similar experience and degree levels, and they earn nearly \$20,000 less than suburban teachers with similar experience and degrees.

## SUMMARY

Rural teachers report participating in slightly fewer professional development opportunities, although this is not clear whether it is because such opportunities are not available or not of interest. However, rural teachers report more control over the teaching that occurs in their classrooms and somewhat greater influence in school policy than urban teachers. Overall, rural teachers appear to be among the most satisfied with their jobs, but report lower satisfaction with their salaries. Idaho's rural teachers lag behind significantly in their salaries and in their reported satisfaction with their pay.

## TEACHER JOB SATISFACTION

• Figure 6 •

■ Indicates statistically different from rural at  $p < .05$  ■ Indicates statistically different from remote at  $p < .05$

A

By General Urbanicity (All Schools)	Urban US AVERAGE	Suburban US AVERAGE	Town US AVERAGE	Rural US AVERAGE
I think about transferring	11.8%	7.5%	7.8%	8.4%
This school is well run	27.1%	29.3%	25.4%	30.1%
I am satisfied with my salary	10.6%	14.5%	11.3%	9.9%
Others at this school are satisfied	27.7%	32.3%	27.1%	32.8%
I am generally satisfied	49.0%	56.9%	52.5%	57.1%
I'd leave ASAP for a better-paying job	10.9%	9.3%	8.8%	11.3%
Total School Earnings	\$55,755	\$58,919	\$48,873	\$48,289
<b>Unweighted N</b>	<b>8140</b>	<b>10290</b>	<b>6180</b>	<b>12900</b>

B

By Rural Type (Restricted to Rural Schools)	Idaho AVERAGE	Fringe US AVERAGE	Distant US AVERAGE	Remote US AVERAGE
I think about transferring	10.8%	8.6%	7.1%	8.5%
This school is well run	28.4%	30.7%	30.1%	26.4%
I am satisfied with my salary	1.6%	9.8%	9.7%	11.4%
Others at this school are satisfied	29.6%	32.2%	34.6%	32.0%
I am generally satisfied	45.1%	55.3%	60.6%	56.1%
I'd leave ASAP for a better-paying job	14.5%	12.7%	8.7%	12.5%
Total School Earnings	\$39,464	\$50,226	\$45,862	\$43,307
<b>Unweighted N</b>	<b>260</b>	<b>6400</b>	<b>3840</b>	<b>2650</b>

Sample sizes rounded to nearest 10 to comply with NCES data reporting rules.

Source: 2011 Schools and Staffing Survey—Public Teacher Survey

## • DISCUSSION •

The results from recent national surveys indicate that the teacher labor market in rural areas differs in meaningful ways from the market in non-rural areas, particularly suburban and urban areas. However, some of the differences were not as pronounced as one might expect. For instance, rural schools were not more likely to report vacancies than urban or suburban schools, even after controlling for the fact that rural schools tended to employ fewer teachers. This pattern held when I examined three categories of rural schools: rural fringe, rural distant, and rural remote. All experienced vacancies at approximately the same rate. Rural schools did not tend to report greater difficulty filling vacant positions except when it came to ELL positions. This will be an interesting trend to follow over time as it could simply reflect a demographic lag among those who are qualified to teach.

Teacher vacancies and teacher turnover alone are not necessarily as big a concern as who is hired to fill those vacancies (Ingersoll, 2001). For example, schools could report little difficulty filling positions because they are not as selective with candidates as they should be. Unfortunately, the data did little to assuage these concerns. There continues to be a persistent gap between the observable qualifications of teachers in rural schools versus suburban and even urban schools. Fewer master's degrees among rural teachers should not necessarily be cause for great alarm, since emerging research suggests master's degrees do not translate into benefits for students of these teachers (Clotfelter, Ladd, & Vigdor, 2007a, 2007b; Goldhaber, 2002). However, rural teachers are less likely than any other group to have graduated from a selective college, and other research has found lower academic aptitude among rural teachers (Fowles et al., 2013).

One of the most intuitive strategies to attract high-quality teachers to rural areas is to raise the relative salaries of some hard-to-staff rural schools. As has already been shown in the SASS data, rural districts pay significantly less than non-rural districts. Prior research has found a positive connection between teacher salaries and teacher retention (Guarino, Santibanez, & Daley, 2006; Hanushek et al., 2004; Podgursky, Monroe, & Watson, 2004). The rural teachers in this analysis were less likely to indicate being satisfied with their salaries, and were also slightly more likely to agree that they would take a higher-paying job if one came along. Despite variation in cost of living, the differences in rural salaries are still lower in real terms than for other teachers (Provasnik et al., 2007). Thus, salaries appear to be a sticking point among rural teachers.

While it may be difficult to change pay scales, districts can use bonuses, such as signing bonuses or shortage field bonuses, to attract teachers to specific positions. The prevalence of these types of bonuses is low overall. However, the prevalence of shortage pay, for instance, is less than half as common in rural districts (9.9 percent) as it is in urban districts (20 percent). Signing bonuses are less common overall, but are even less prevalent in rural districts (3.7 percent) than in urban districts (5.9 percent). The same pattern follows for student loan forgiveness programs. Overall, rural districts are not employing these types of bonuses with the same frequency as urban schools. However, the results of a recent experiment designed to move high-performing teachers

**Given the budget constraints faced by districts, the use of financial incentives to attract teachers to rural schools should be targeted to the hard-to-fill positions.**

to low-performing schools suggests that bonuses need to be quite substantial in order to induce teachers to change behavior (Glazerman, Protik, Teh, Bruch, & Max, 2013). Given the budget constraints faced by districts, the use of financial incentives to attract teachers to rural schools should be targeted to hard-to-fill positions.

The SASS data reveal that rural teachers tend to be satisfied with their jobs; nearly 30 percent of teachers strongly agreed with the statement that in general they were satisfied. Similarly, a higher percentage of rural teachers than almost any other group strongly agreed that their school was well run. They also expressed greater autonomy and influence than teachers in other settings. On the whole, it appears that rural teachers are more satisfied than other teachers. However, this message is not readily communicated to potential employees of rural schools (Hammer et al., 2005). Rural districts by themselves may not have the resources to mount large-scale public relations campaigns, but a consortium of rural districts may be successful in getting the message out at teacher job fairs and other outlets.

Historically, teachers have been reluctant to relocate from urban or suburban areas to rural areas (Boyd et al., 2005; Cowen, Butler, Fowles, Streams, & Toma, 2012). This suggests that a “grow your own” approach may be more appropriate. The SASS data indicate that few teachers in rural areas are certified through alternative certification programs. These types of programs may be more successful in getting rural career switchers into the classroom.

The growth of technology in rural areas gives rural schools an opportunity to think outside the bounds of the traditional model of a physical teacher in every classroom. Job-sharing programs, in which a consortium of rural schools might share a “virtual” teacher for several periods a day, illustrate how rural schools might begin to think differently about education. In the 2011 SASS, 63 percent of rural schools reported having at least one “distance” class where instruction was delivered to students remotely. Using distance education in innovative ways is just one example of how rural schools could begin to think about filling hard-to-fill positions. As rural schools have opportunities to interact and solve problems together through partnerships, consortia, and virtual learning communities, they may have the chance to bring innovative solutions that will serve as models for all schools across the country.

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