

**Teacher and Non-Teacher  
Labor Markets In Wyoming**

**Final report to  
Wyoming Select Committee  
on School Finance Recalibration**

**Dr. Christiana Stoddard**

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# **Chapter I**

## **Labor Market for Teachers**

### **Employed by K-12 Districts in Wyoming**

## Teacher Labor Markets Executive Summary

Based on this analysis, Wyoming model salaries are at the top of regional salaries, enabling Wyoming to recruit teachers from many surrounding states and to maintain very low turnover rates. The model funding has enabled school districts to provide salaries that are highly competitive nationally. Wyoming is positioned to allow districts to compete more aggressively for teachers from more selective higher education institutions in the area.

The first section of this chapter shows that teaching salaries in Wyoming rose rapidly since 2000, and rose especially sharply after 2005. Model funded salaries have also increased over time, but actual salaries rose by even more. Teaching salaries rose rapidly in Wyoming compared to neighboring states, relative to other professional occupations, and relative to other comparable workers in Wyoming. Teaching wages in Wyoming are high relative to other occupations, at 94 percent of wages of other professional and technical workers with a twenty percent wage premium after adjusting for their shorter weeks of work. The US average and average in neighboring states remained between 75 and 80 percent. Actual teaching salaries relative to salaries of other comparable workers are the highest in the nation. Model salaries, both unadjusted and relative to the salaries of comparative workers, are the highest in the region and in the top third of the nation.

The second section of this chapter then asks how this increase affected the recruitment and retention of teachers. Overall teacher turnover remained constant during this period, with a modest rise since 2008. Exit rates of teachers are close to 10 percent, similar to recent years, but higher than the lowest rate of 7.5 percent in 2008/09. This is largely due to retirements: exit rates of new teachers remain at about 12 percent, right at the average since 2003 with no trend.

The vast majority of teachers who exit the profession in Wyoming earn significantly less in their subsequent employment. Average wages declined by about \$23,000 for individuals who left teaching for another occupation. Wyoming increasingly recruits teachers from out of state, with about 70 percent of new hires coming from other states in 2014. However, these teachers are not necessarily from better institutions in the past: notably, there has been a rise in teachers with degrees from schools with large online programs. This is something that bears monitoring into the future to ensure continued teacher quality.

## DATA SOURCES:

There are a number of sources of information about teaching salaries and salaries of other workers used in this chapter and throughout the report. **Table 1** summarizes these data sources.

- The Wyoming Department of Education (WDE) staffing files report salaries for all teachers in Wyoming. This is the most complete source of information about the characteristics and salaries of teachers in Wyoming.
- U.S. Department of Labor reports salaries by occupation in the Occupational Employment Statistics (OES) survey each November and May. This is the most rapidly available source of general employment information, making it useful for monitoring external markets. The survey is only of employers; it does not include personal characteristics of workers. These data cannot be used to adjust for workers' characteristics (e.g., work experience, education, hours of work) or benefits.
- The American Community Survey (ACS) is a mini-Census survey of individuals who report their own salary as well as their own characteristics. This source has smaller samples of individuals, but allows for comparisons of teachers with other workers who have similar personal and job characteristics.
- The National Education Association (NEA) reports average teaching salaries for full time workers based on data reported by state education agencies. This data source is the most current source of teaching salary information across states, with one year of data beyond the OES estimates. The U.S. Department of Education's National Center for Education Statistics (NCES) uses these wage series in reports of teacher salaries.

**Table 1: Comparison of Data Sources**

<b>Data Source</b>	<b>Latest year available</b>	<b>Comparison with other workers</b>	<b>Able to adjust for age, personal characteristics education, hours/weeks worked</b>
<b>WDE Staffing Files</b>	2014-15 school year	None	Teachers only
<b>NEA</b>	Estimates through 2014-15 school year	Compare average teaching salaries with average salaries in other states	No
<b>OES</b>	May 20145	Yes—comparisons by occupation	Full time, full year only
<b>ACS</b>	2014	Yes	Yes

## How Competitive are Wyoming Teaching Salaries?

How attractive is the teaching profession in Wyoming? The first section of this chapter compares teaching salaries in Wyoming both over time and compared to the model funded salaries. While this clearly shows that teaching salaries have increased sharply over time, the attractiveness of teaching still depends in part on how teaching salaries compare with other alternatives.

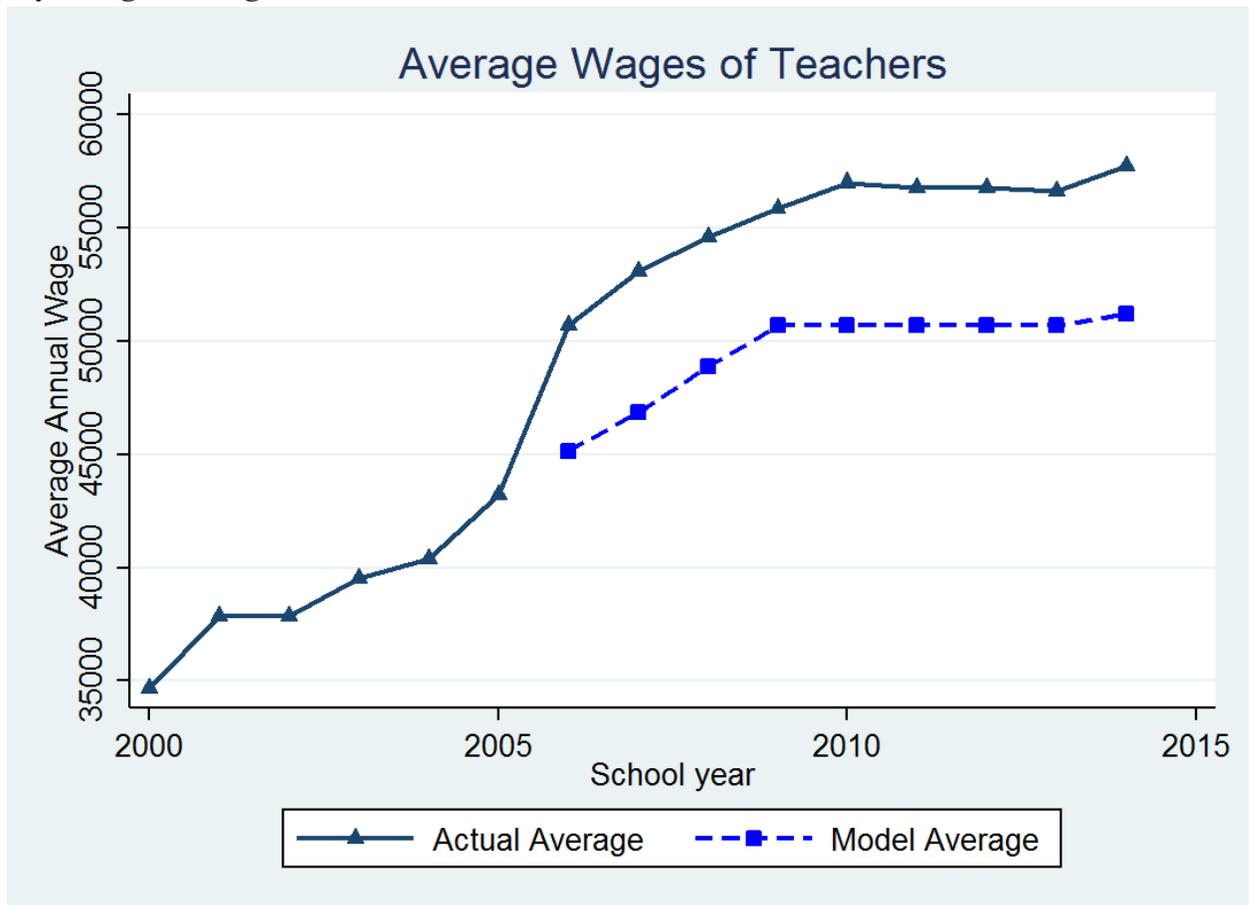
Several comparisons are relevant for different groups of potential and actual teachers. New teaching graduates and other existing teachers in the region likely compare salaries in Wyoming with salaries in other states when deciding where to live. These cross-state comparisons reflect the attractiveness of Wyoming to individuals who have already decided to become teachers. It is also important to consider the relative attractiveness of teaching to that of other occupations. For example, a college student who plans to live in Wyoming might compare teaching salaries in Wyoming with salaries in a broad range of professional fields in the state when deciding what occupation to choose. This comparison reflects that decision.

Finally, current teachers in Wyoming weigh their teaching salary against their options in other occupations in Wyoming when deciding whether to remain in teaching. Current teachers' options may depend on their age, education level, gender, number of hours they would like to work, and other individual characteristics. Each of these comparisons is relevant for some group (new teaching graduates, college students deciding on a career, current teachers), and so there are alternative ways to rank the attractiveness of teaching in Wyoming relative to other states. However, the final section shows that regardless of the metric used, Wyoming ranks very high as one of the most attractive places to be a teacher in the United States.

### A. How have salaries in Wyoming changed over time?

**Figure 1** shows that teacher salaries in Wyoming rose rapidly from 2004 through 2010, and since then have plateaued. The trajectory largely followed the path of model salaries, except that in 2005, there was a large jump relative to the model, a gap which has persisted since then. Currently, actual average salaries are \$57,715, which exceeded model salaries of \$51,191 by more than 10 percent. The WDE's Continued Review of Educational Resources in Wyoming (CRERW) report includes weighted model salaries that predict model salaries based on experience and education, which average \$52,724. Even compared to this adjusted salary, actual salaries are nearly 10 percent higher.

**Figure 1: Actual Average Teaching Salaries and Average Teaching Salaries in the Wyoming Funding Model**



Source: Wyoming Department of Education staffing files.

**B. How do teaching salaries in Wyoming compare with salaries in other states?**

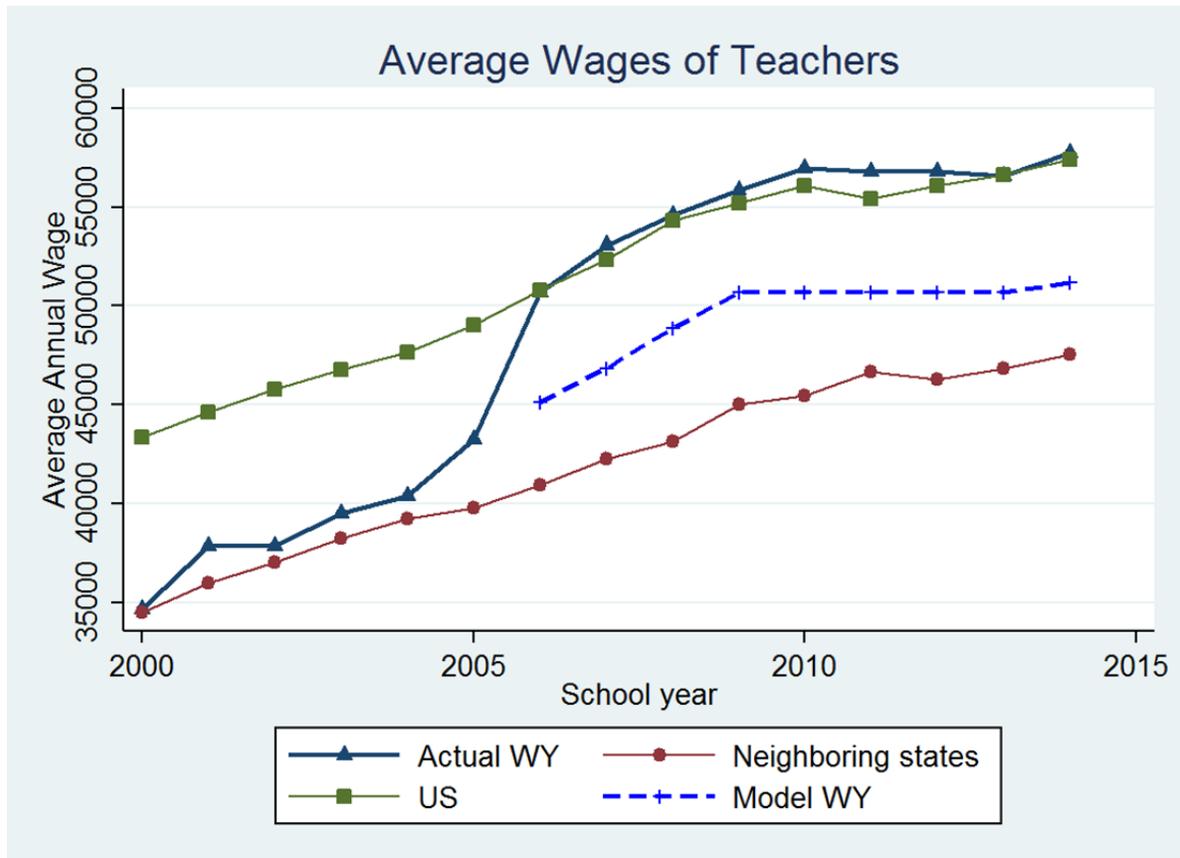
The rise in salaries indicates that Wyoming is likely to have become a more attractive place to teach relative to the past. High teaching salaries relative to other locations enable Wyoming to recruit new teaching graduates and existing teachers from other states into Wyoming, and allow Wyoming to retain Wyoming teaching graduates and existing teachers in the state. How do model and actual salaries compare with other states?

**Figures 2 and 3** show that average salaries in Wyoming have tracked average salaries in the United States very closely since 2006/07, holding steady between 2010-2012 when US salaries declined following the budget crises in many states, and then in the past two years tracking the US average closely.

Average salaries of Wyoming teachers rose by about 1.5 percent from 2010/11 through 2014/15 (from \$56,978 in 2010-11 to \$57,715 in 2014/15). Similarly in the U.S., average

teacher wages rose by about 1 percent (from \$56,069 in 2010/11 to \$56,689 in 2013/14). Teaching salaries in adjacent and comparison states have risen by about 6.5 percent over the last 3 years, although remaining about 19 percent lower than teaching salaries in Wyoming. Model salaries are intermediate, falling below US average salaries, but remaining about 5 percent higher than the regional average.

**Figure 2: Comparing Average Teaching Salaries in Wyoming, in Neighboring States, and in United States**

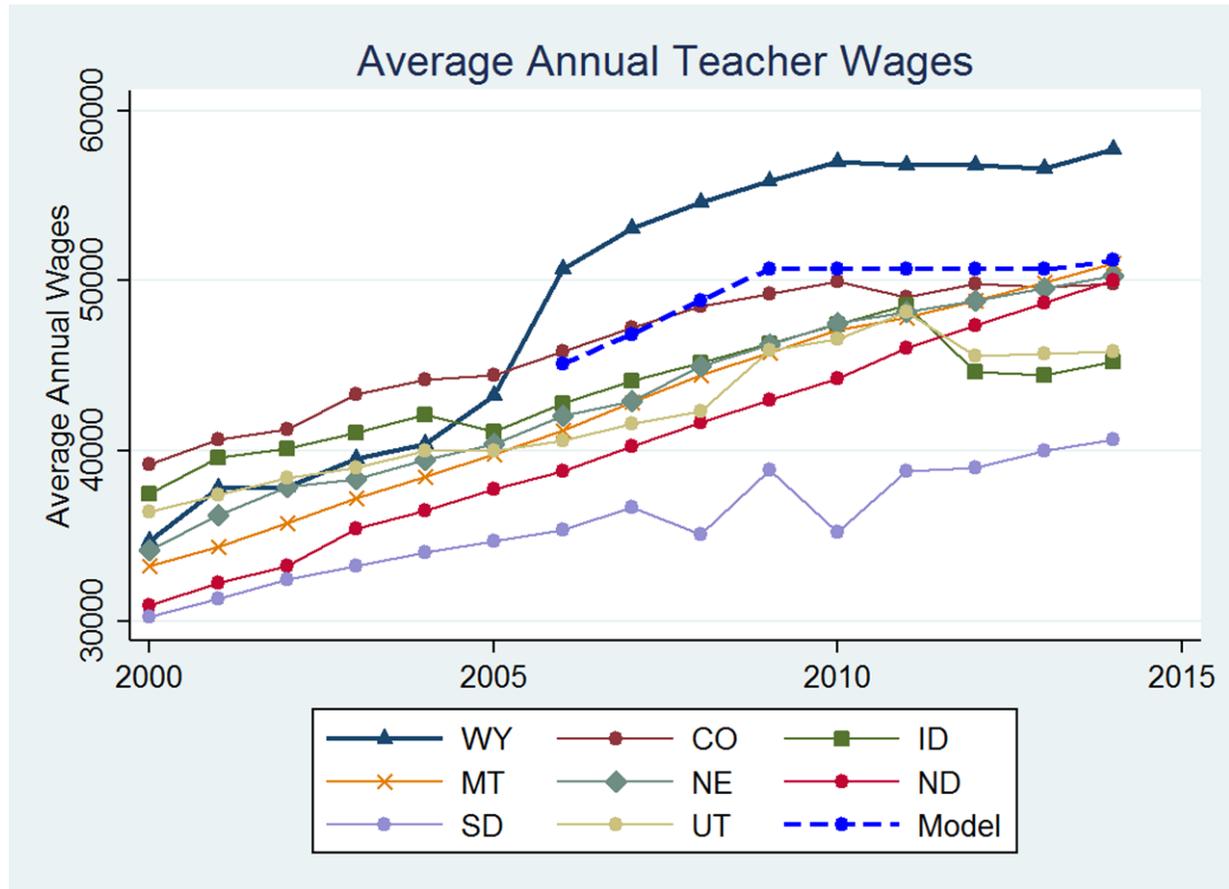


Source: NEA Rankings and Estimates, 2014

**Figure 3** disaggregates this comparison across states. It shows that average salaries in Wyoming were roughly in the middle of other states in the region early in the 2000s: higher than salaries in Montana and South Dakota, roughly comparable to salaries in Utah and Nebraska, and lower than salaries in Colorado and Idaho. This was true until 2005, when Wyoming salaries increased sharply. Salaries are now well above the average salaries of all other states in the region and exceed the average salary for the United States as a whole. **Figure 3** also shows that salaries in the model are positioned just above the highest average salary of all the states in the region, currently just above those of Colorado, Montana,

Nebraska, and North Dakota. Salaries of these highest paid states have grown to be increasingly clustered at around \$50,000.

**Figure 3: Comparing Average Teaching Salaries in Wyoming and in Neighboring States**



Source: NEA Rankings and Estimates, 2014

**C. How do teaching wages compare with wages of similar professionals?**

How attractive is teaching in Wyoming compared with other occupations? This broad comparison is most relevant when considering the occupational choice of an individual who plans to live in Wyoming and is choosing a profession. For example, a college student will compare salaries in teaching with salaries in other professional and technical occupations.

The data allows for several sets of comparisons. The BLS classifies groups of similar occupations into broad categories. Teachers are members of the “*Professional and Technical Occupations*” group (OCC Codes 11-000 through 29-999). However, this group is very large, and certainly includes some occupations that are both higher and lower skilled than teaching. *Comparable occupations* are professional and managerial occupations that have skills and

attributes most like teaching. These are defined by the Economic Policy Institute (EPI) based on their analysis of specific skills and attributes of jobs.<sup>1</sup> These occupations are listed in **Table 2**.

**Table 2: Occupations Identified with Skills and Attributes Comparable to Teaching**

Accountants and auditors	Registered nurses
Underwriters	Occupational therapists
Personnel training and labor relations specialists	Physical therapists
Inspectors and compliance officers, except construction	Trade and industrial teachers
Vocational and educational counselors	Architects
Forestry scientists, Conservation scientists	Archivists and curators
Technical writers	Clergy
Editors and reporters	Computer programmers

Source: Economic Policy Institute, 2004.

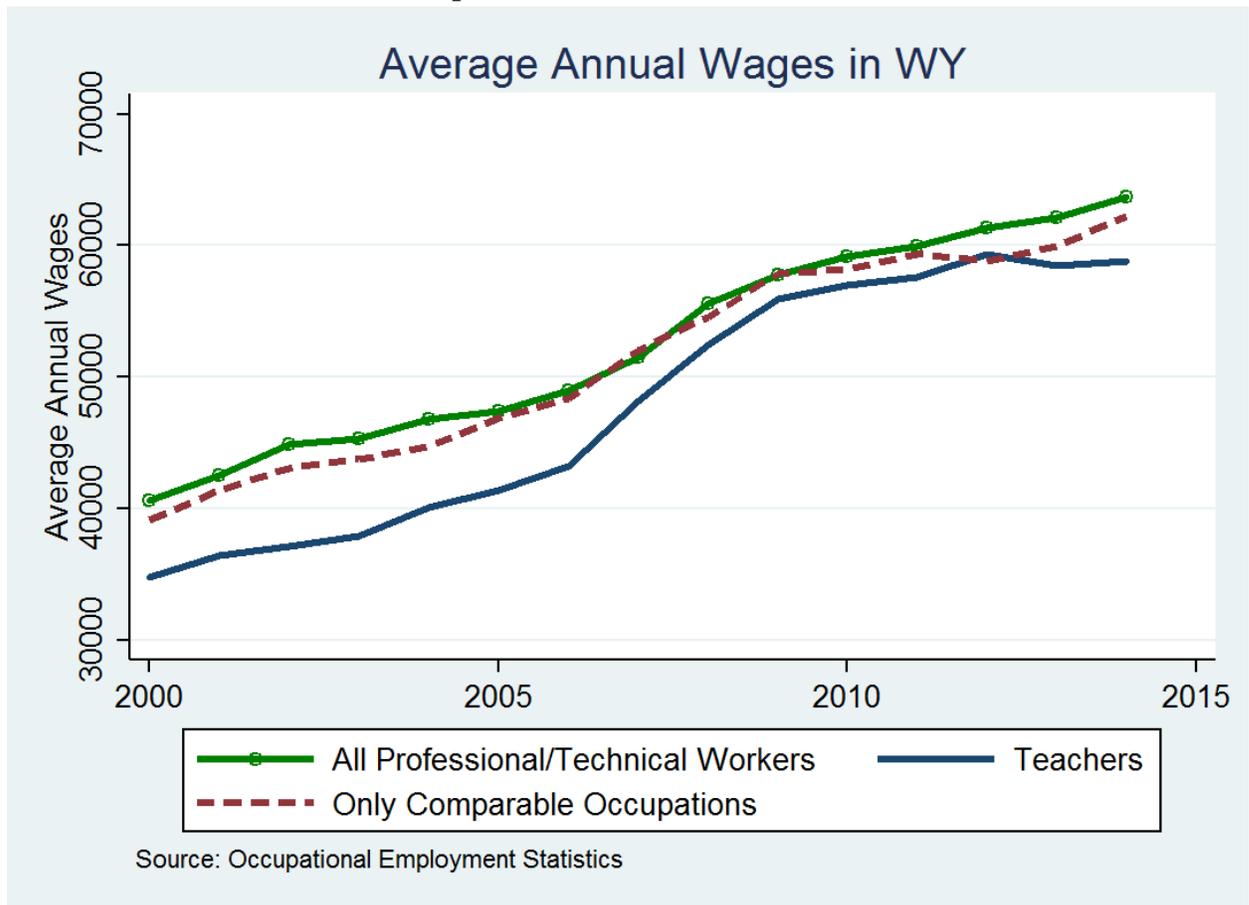
**Figure 4** compares teaching salaries with salaries in other professional and technical occupations. Annual salaries in teaching are lower than those in other professional and technical occupations (although hours and weeks of work are lower and benefits are higher). However, this gap shrank considerably over this period, converging to be equal to those in comparable occupations in 2012, and then maintaining a gap of about 95 percent of the salaries of other professional and technical occupations. (Note that teaching salaries are typically lower than the salaries of other professional workers in part due to the high levels of benefits and relatively lower weeks and hours of work.<sup>2</sup>)

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<sup>1</sup> See Allegreto, Corcoran and Mishel (2004) for more details. The U.S. Bureau of Labor Statistics National Compensation Survey reports the skills and attributes of occupations along 10 dimensions including factors such as knowledge required, supervision received, and complexity of the tasks.

<sup>2</sup> See Podgursky and Tongrut (2006) for more work on this issue.

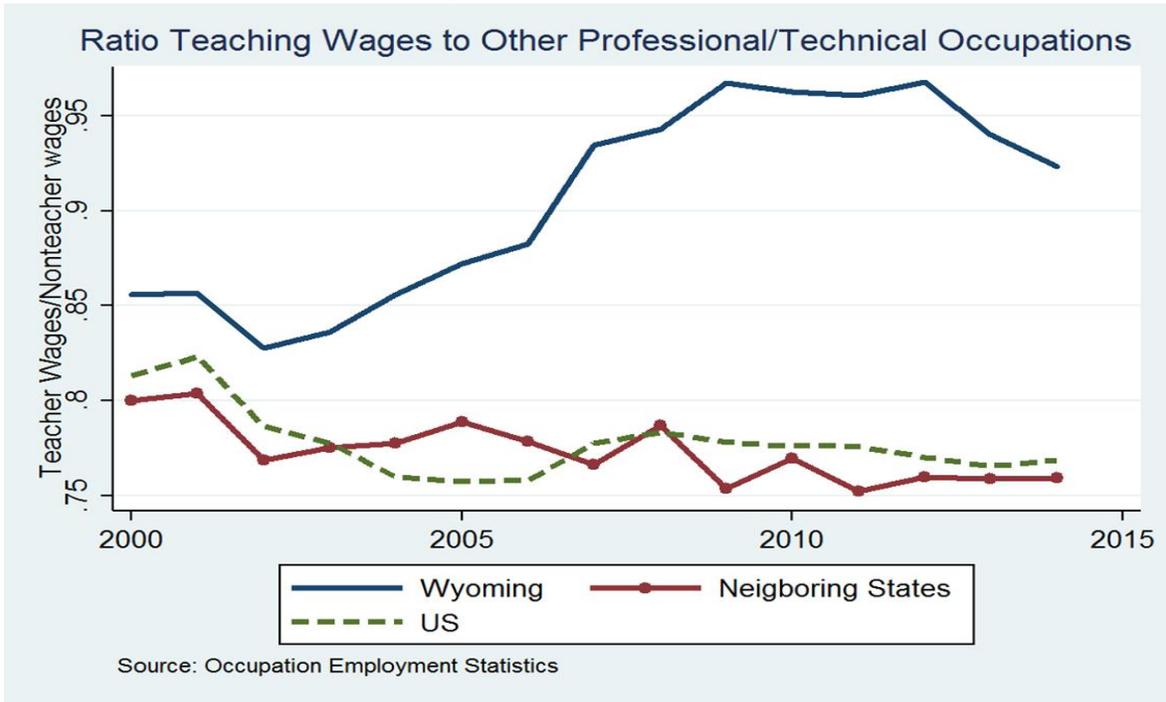
**Figure 4: Comparing Average Teaching Salaries in Wyoming with Salaries for other Professional and Technical Occupations**



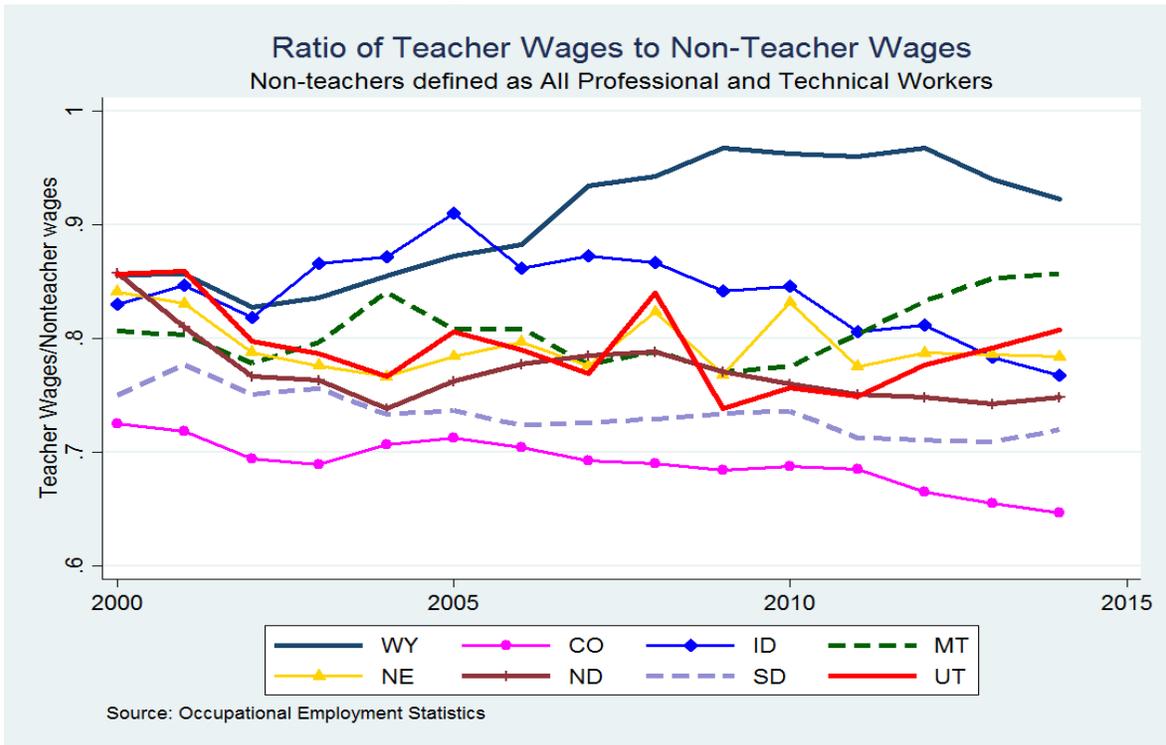
**Figure 5** shows that this increasing ratio is unique to Wyoming. In 2005, the ratio of annual teaching wages to wages in other professional occupations was already higher than in the U.S. and in nearly all other states in the region, at about 85 percent. The ratio in Wyoming has remained close to 95 percent since 2008/09, although the latest year shows a decline to 93 percent. In the U.S., teaching wages are about 73 percent of the wages of other professionals, a ratio that has trended downward since 2005/06. The ratio in neighboring states is even lower. **Figure 6** disaggregates this for each of the neighboring and comparison states.

Part of the reason that annual wages in teaching are likely to be lower than in comparable occupations is that hours and weeks of work in teaching tend to be much lower. This will be explored in the next section.

**Figure 5: Comparing Teaching Wage Ratios in Wyoming and Other Areas, Professional and Technical Occupations**



**Figure 6: Comparing Teaching Wage Ratios in Wyoming and Other States, Professional and Technical Occupations**

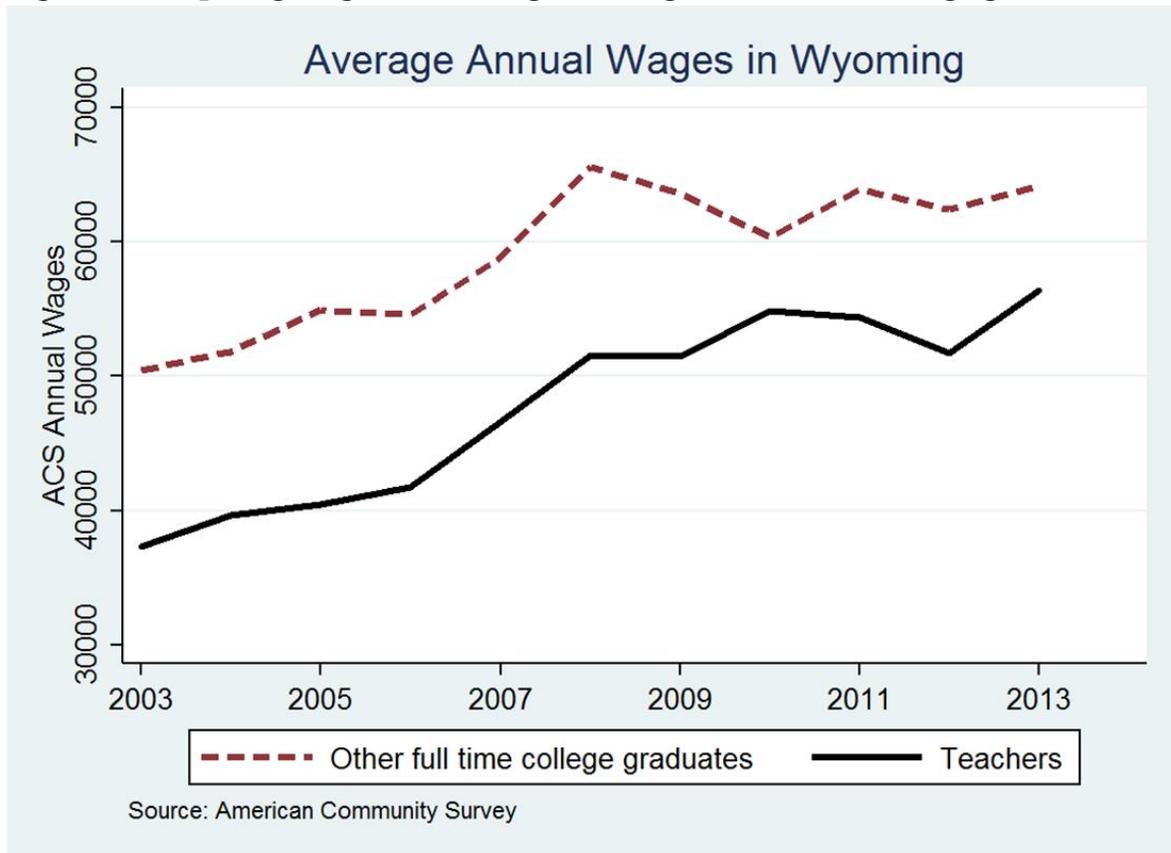


#### D. How do salaries compare with non-teaching salaries for similar workers?

These comparisons are useful when thinking about the occupational choices of all individuals in Wyoming. However, when current teachers consider staying in the profession or leaving for another occupation, it is more useful to compare their salaries to those of similar workers in jobs with similar characteristics. For example, all teachers in Wyoming have a bachelor's degree, so their salaries are best compared to those of other college graduates. Teachers in Wyoming are slightly older than other workers in Wyoming and therefore have more work experience. They are much more likely to be female and to have an advanced degree. They also work fewer hours and weeks of work than the average worker in Wyoming.

The American Community Survey is used to make these comparisons, as it has information about personal and job characteristics of individual workers. **Figure 7** first reports the average wages of teachers and of other college graduates in Wyoming.

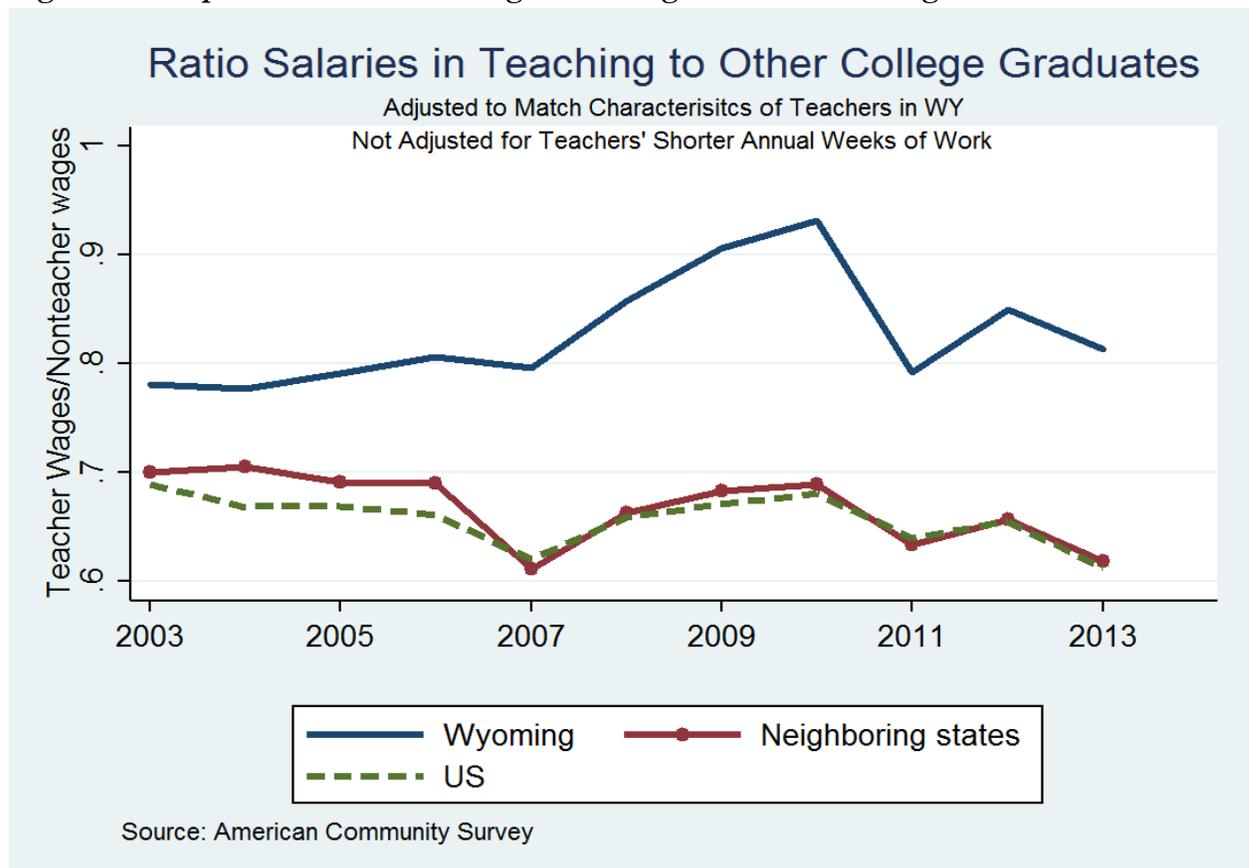
**Figure 7: Comparing Wages in teaching with Wages of Full time college graduates**



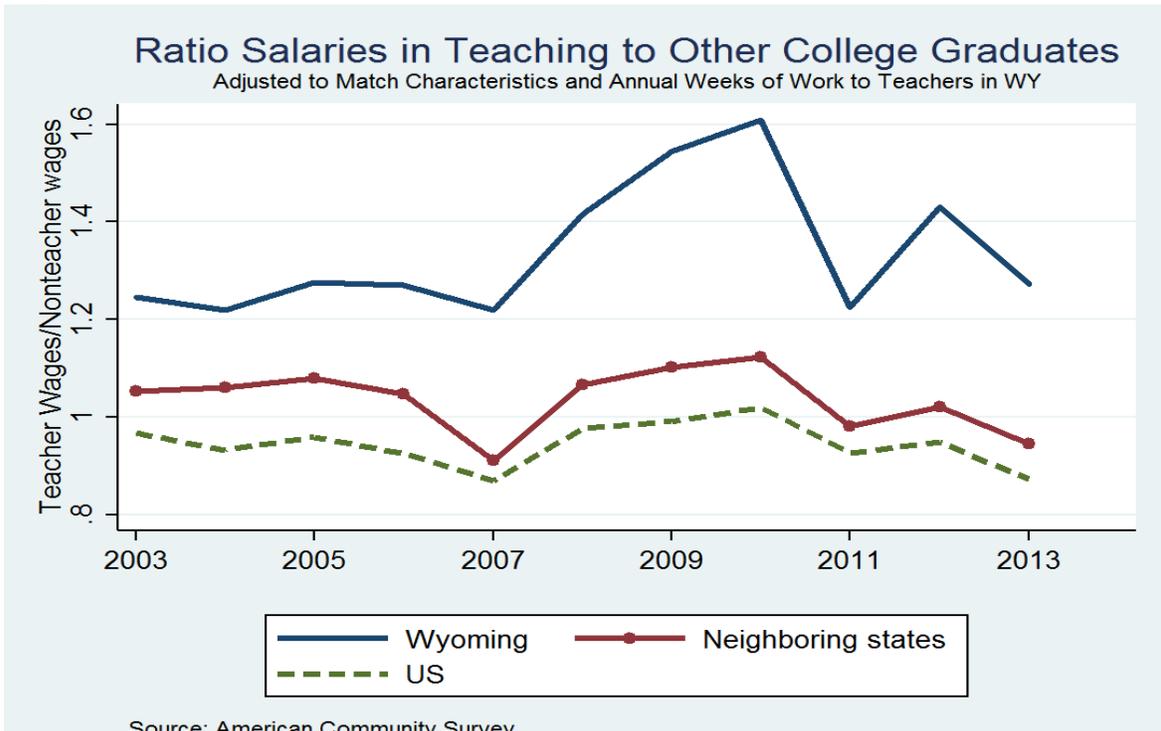
**Figure 8** reports the ratio of teaching wages and non-teaching wages after adjusting non-teaching wages. The most appropriate way to make these multiple comparisons simultaneously is to use multivariate regression analysis. Details about these regressions are reported in Appendix C. Based on these regressions, wages for non-teachers are predicted using the average characteristics of teachers. These predictions will adjust the average wages for individuals to mimic the characteristics of teachers. Wages for teachers outside of Wyoming are also adjusted using these regressions to match the characteristics of Wyoming teachers. Like with the results for all professional and technical occupations, Wyoming's ratio of teaching to non-teaching wages far surpasses the average in other neighboring states and in the US as a whole. While teaching wages have eroded relative to wages for similar workers in other states, teaching wages in Wyoming have increased.

**Figure 8** first reports the ratios only adjusting for personal characteristics like age and education. **Figure 9** reports the adjustment using weeks of work as well. After adjusting for weeks of work, teachers in most parts of the United States are paid roughly the same as similar non-teachers. In Wyoming, however, they are paid about 22 percent more. **Figure 10** disaggregates the data for individual comparison states.

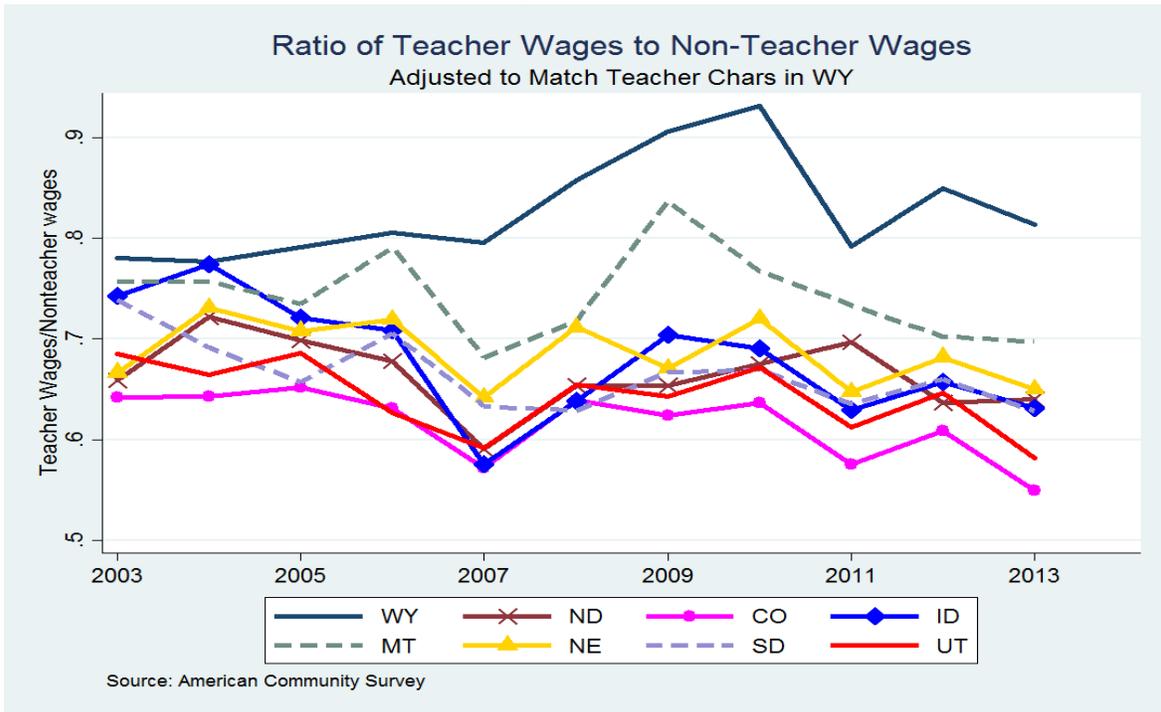
**Figure 8: Comparison of Teacher Wages and Wages of Similar College Graduates**



**Figure 9: Comparison of Teacher Wages and Wages of Similar College Graduates, Adjusted for Weeks of Work**



**Figure 10: Comparison of Teacher Wages and Wages of Similar College Graduates, Adjusted for Weeks of Work. Wyoming and Comparison States**



## E. Rankings of Model and Actual Salaries

The previous sections each report a different type of comparison of teaching salaries in Wyoming relative to salaries of other groups. However, regardless of which measure is used, teaching has become very attractive in Wyoming relative to other states. **Table 3** shows the rank of Wyoming across other states based on these various comparisons in the latest year available for each data source. In nearly every instance, Wyoming ranks as one of the top states in terms of relative salaries. For example, comparing only teaching salaries across states, Wyoming ranks 14<sup>th</sup>. However, since cost-of-living and alternative employment opportunities in Wyoming differ from other states, this comparison is misleading. Non-teaching wages also vary across states because of differences in state characteristics. After comparing the ratio of teaching salaries to the salaries of other professional workers in each state, Wyoming emerges as the state with the highest ratio. When comparing the ratio of teaching salaries to the salaries of other employed college graduates in the state, Wyoming ranks first in the nation. This is true whether or not those salaries are adjusted to match the characteristics of teachers or simply compared to other professionals.

The second and fourth columns use the model salary in Wyoming for the relevant year instead of the actual average salary in Wyoming in that year. If actual salaries had been the same as the model salaries, Wyoming would have ranked in the upper third of US states. It would still be ranked at the very top of the region.

**Table 3: Rank of Wyoming Teaching Salary Relative to Other States Based on Comparisons with Alternative Workers**

	Teacher wage/ Non-Teacher Wage Professional & Technical Occupations OES data		Teacher wage/Non-Teacher Wage College Graduates, Adjusted for Characteristics ACS Data	
	Actual Average	Model Average	Actual Average	Model Average
2014-15	.92	.80	--	--
Rank in US	1	16	--	--
2013-14	.94	.81	.81	.78
Rank in US	1	12	1	1

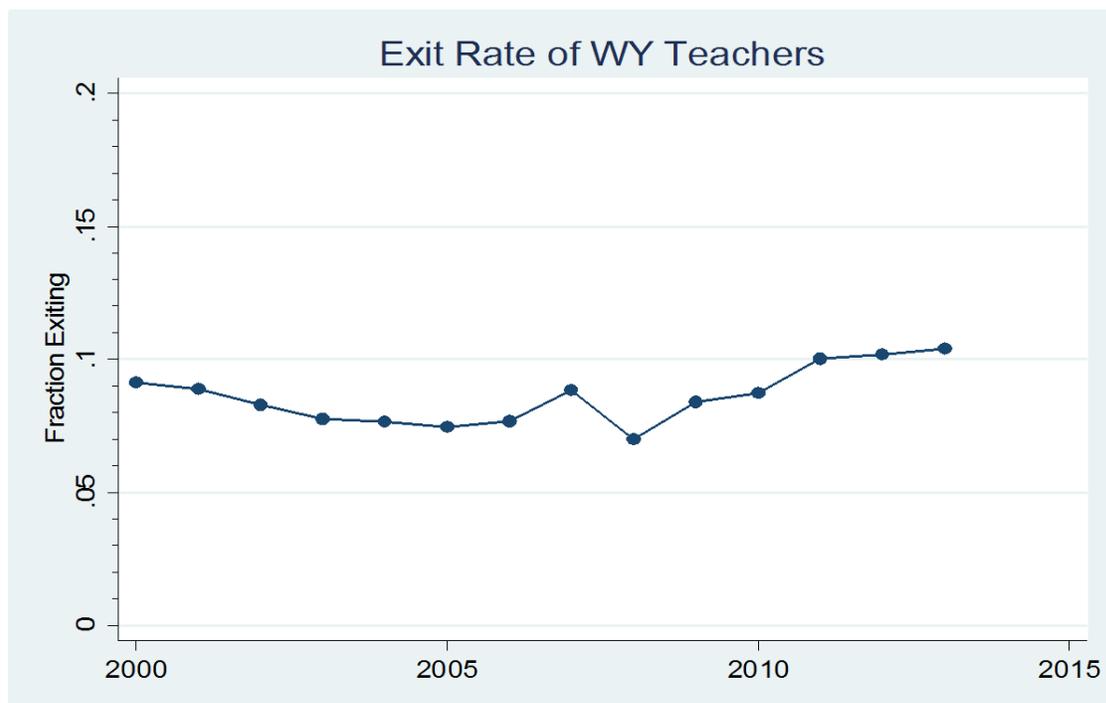
## How have rising teacher salaries affected teacher recruitment and retention?

### A. Retention: New Teachers, Retirements, and Exits for other Professions

How has the increase in teacher salaries affected recruitment, retention, and teacher quality in Wyoming? This is not a simple question to answer. First, a number of factors beyond salary affect the decision to become or to remain a teacher. Many teachers exit teaching or leave the state for reasons unrelated to the attractiveness of the job, including retirement, the need to care for other family members, or relocation due to spousal job constraints. However, the turnover rates of new teachers in particular are likely to be more sensitive to the relative attractiveness of teaching in Wyoming, and so the analysis below examines both overall turnover rates and the exit rates of new teachers.

Teacher turnover rates are based on the WDE fall staffing files. Full time teachers in the fall staffing files in one year are compared to teachers in the following year. For example, the exit rate for 2013 is the percentage of teachers in October of 2013 who are not teaching in October of 2014. **Figure 11** reports exit rates of full time teachers from Wyoming. Over time, about 10.5 percent of teachers in a given year are no longer teaching in Wyoming in the following year. **Figure 11** also shows that this exit rate has remained relatively constant at between 9.5 percent to 11 percent since 2000, with no marked trend over time.

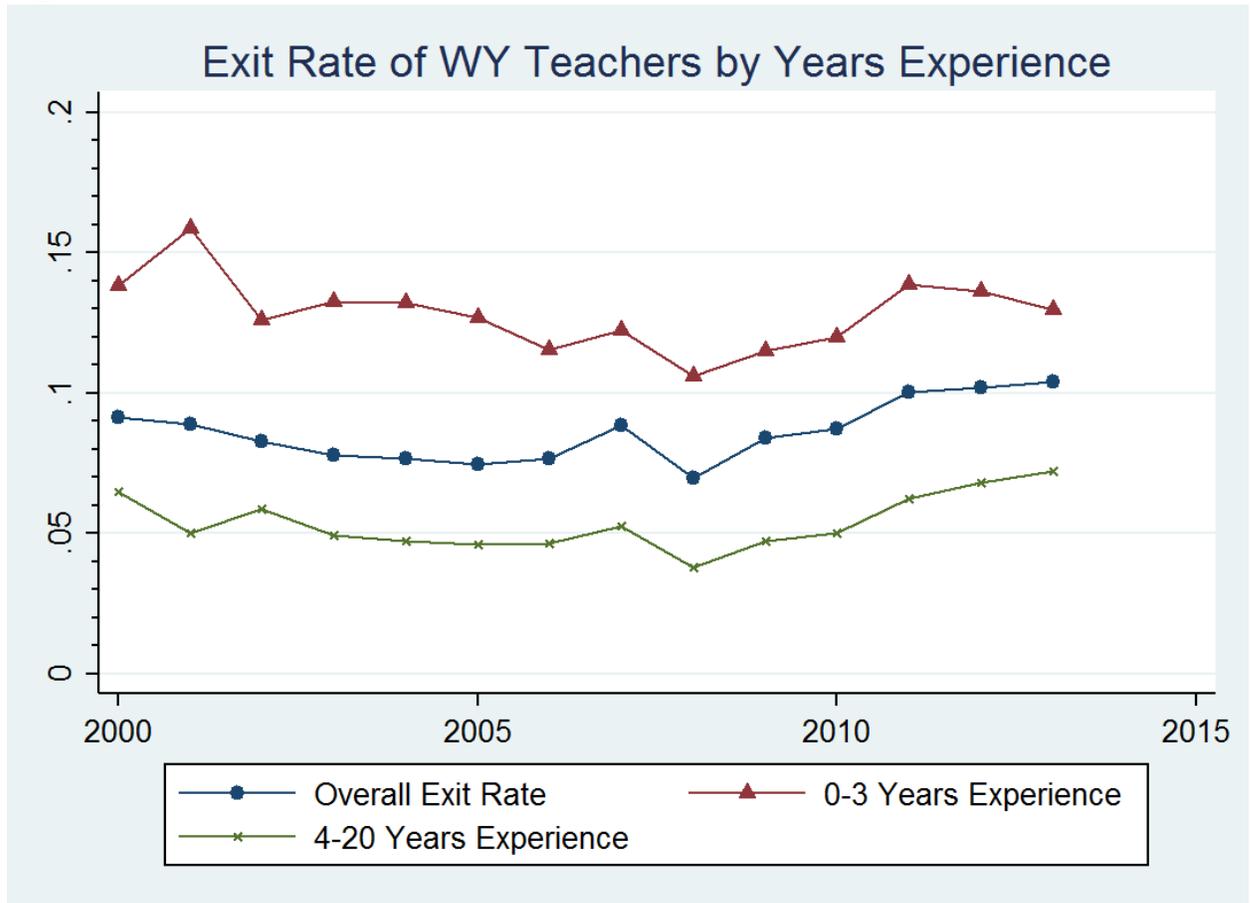
**Figure 11: Trends in Teacher Turnover**



Source: WY Department of Education Staffing Data, full time teaching assignments.

Some exit is always inevitable—for example, retirements make up a large fraction of exits. The exit of lower quality teachers would potentially be beneficial if they were replaced with higher quality new hires. The exit rate of new teachers is more of a concern as new teachers tend to be associated with lower student achievement in their first three years. In the last two years of available data, about a third of teachers leaving Wyoming schools were close to retirement age (55 or older). On the other hand, about a third of a percent had less than three years of experience. New teachers are likely to be more sensitive to other employment opportunities, as they have acquired little experience on the job. Furthermore, turnover of new teachers is more problematic for schools, as teachers are generally less effective in their first three years of teaching. **Figure 12** reports exit rates for teachers with one to three years of experience and for mid-career teachers.

**Figure 12: Exit rate for New and Mid-Career Teachers**

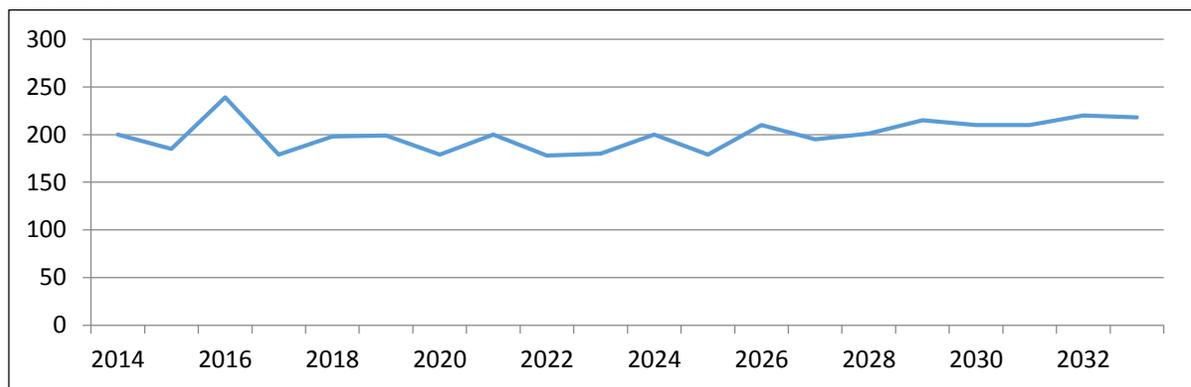


Source: WY Department of Education Staffing Data, full time teaching assignments.

**Figure 12** shows turnover rates have remained relatively stable, although there has been a rise from about four percent to about seven percent for mid-career teachers since 2008. Rates for new teachers also had a slight rise, but then have declined in the last two years.

Retirements are a second source of significant turnover. Figure 13 shows the number of individuals projected to become eligible to retire for 2104 through 2033, based on the eligibility rules of the Wyoming Retirement System. Individuals participating in this system whose contracts began before September 1, 2012 are eligible to retire at 60 years of age or when age plus experience is greater than or equal to 85. The number of teachers becoming eligible under this rule is projected to be relatively stable, with an average of about 200 retirements per year. This is somewhat lower than the number of older teachers (ages 55 and older) who have exited teaching over the past three years.

**Figure 13: Projected Teachers Becoming Eligible for Retirement (Age 60 or Rule of 85), 2015-2033**



Source: Analysis based on WY Department of Education Staffing files (WDE 602)

Because the leading age of the baby-boom has passed through teaching, retirement pressures for the future are expected to be similar to those of the past four years, which is somewhat higher than the retirement pressure was prior to 2007. However, the age profile is beginning to shift towards younger replacements.

Although teaching wages on average appear to be competitive with wages of other occupations, do teachers who exit teaching take more attractive outside offers? The Research and Planning (R&P) Division of the Department of Workforce Services (DWS) has tracked the wages of those who leave teaching in Wyoming. These individuals can be followed if their subsequent employment is covered under the Unemployment Insurance system in Wyoming or in states with data sharing agreements. To increase the sample size and protect the confidentiality of individuals, R&P, DWS pooled data for individuals who exited teaching over the 2011/12 and 2012/13 school years.

**Table 4** reports that these individuals generally took a substantial pay cut, on average losing about \$23,000. About 30 percent could not be tracked, with many of these likely retiring or leaving the work force. Of those who could be tracked, about 70 percent worked in education services within Wyoming, on average for lower pay. Only seven percent left for employment in another state, whether in teaching or another occupation. The most popular

destination occupation outside of Wyoming public schools was employment in another public or social service, like health care, social assistance, or public administration.

**Table 4: Destination Occupations and Wages of Wyoming Public School Teaching Exits**

	Teaching Contract Wage	Wage in Destination Occupation
<b>Total 2011/12 and 2012/13 Exits (N=1,513)</b>	<b>\$55,308</b>	<b>\$32,364</b>
Destination Occupation		
Other public schools, education services in Wyoming (N=750)	\$55,354	\$32,766
Other public and social services in Wyoming (other education services, health care, social assistance, public administration) (N=161)	\$49,526	\$34,087
Other occupations in Wyoming (N=79)	\$52,608	\$27,393
Education services occupations in other states (N=60)	\$50,838	\$33,529
Other occupations in other states (N=19)	\$47,740	\$18,884
Destination Unknown (N=444) May have left labor force or moved to state without data sharing agreement	\$58,736	--

Source: Research and Planning, Wyoming Department of Workforce Services. Based on Wyoming Department of Education Contract Files (WDE 602) and R&P Wage Records.

## B. Recruitment of new teachers

The first section of this report showed that salaries in Wyoming are high relative to other states in the region and relative to other occupations. Has this led to increased recruitment of teachers from other states? Data on this question are hard to come by, as teachers are not tracked across state lines. However, the WDE data for Wyoming includes the undergraduate institution of teachers licensed in Wyoming. This data is matched to the staffing files to identify new full time hires.

**Tables 5 and 6** report this in two ways. First, **Table 5** looks at all new hires from 2008 through 2014. Not surprisingly based on the high relative wages, Wyoming remains an attractive destination for teachers educated in other states. Previous reports (Stoddard 2011) showed that from 2000-2003 half of new hires in Wyoming had a first bachelor's degree from Wyoming. **Table 5** shows that in recent years, the proportion is about a third, with generally at least as many coming from adjacent states. This is likely due to the competitive salaries in Wyoming compared to the region.

**Table 5: Fraction of Wyoming New Hires, by State where Obtained First Bachelor’s Degree**

Year	From Wyoming	From Adjacent States	Other States	Unknown
2007-08	39%	32%	18%	11%
2009-10	34	38	23	5
2011-12	37	36	23	4
2013-2014	36	36	26	2

Source: Based on Wyoming Department of Education Contract Files (WDE 602).

Some of these new hires may actually be experienced teachers who earned their BA in another state a number of years ago.

**Table 6** restricts attention to new hires who earned a BA in the last four years. Again, Wyoming draws large fractions of these new hires from surrounding states. However, when examining the institutions where Wyoming teachers originate, it does not appear that these institutions have become more selective over time. In fact, the largest change has been the number of institutions that largely serve students online. This is somewhat of a concern, as there is some association between the selectivity of a teacher’s undergraduate institution and higher student performance.<sup>3</sup>

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<sup>3</sup> For example, see Ballou (1996), Clotfelter, Vigdor and Ladd (2006), Ehrenberg and Brewer (1994), Ferguson and Ladd (1996).

**Table 6: Fraction of New BAs from Wyoming and Other States**

BA State	Teachers with BA degree earned 2010-2014, Hired 2012-2014	
	Number Employed	Percent of 2010-2014 Hires
Total	3,081	100%
Wyoming	1,501	48.7%
South Dakota	266	8.6%
Utah	242	7.9%
Colorado	202	6.6%
Nebraska	189	6.1%
Montana	148	4.8%
North Dakota	138	4.5%
Idaho	72	2.3%
Other states	323	10.5%
BA Institution		Percent of 2010-2014 Hires
University of Wyoming		48.5%
Black Hills State		7.5%
Chadron State		5.1%
West Governors University (online)		3.9%
Regis University (large online component)		3.8%
Valley City State		3.0%
About 2% each from University of Northern Colorado, Utah State		
About 1% each from Brigham Young University Idaho, Grand Canyon University, University of Montana, Montana State University, Bozeman, Montana State University Billings		
Other Universities: 18%		

For reference, **Table 7** reports the fraction of University of Wyoming graduates who are eventually employed in Wyoming.

**Table 7: University of Wyoming Teaching Graduates Hired by WY Districts**

<b>Year</b>	<b>Number of BAs or Certificates from University of Wyoming</b>	<b>Number employed in 2014/15</b>
13-14	222	83 (37%)
12-13	270	128 (47%)
11-12	283	142 (50%)
10-11	262	130 (50%)
09-10	264	158 (60%)
08-09	239	116 (49%)
07-08	239	123 (51%)

## Conclusions

This labor market study finds that teaching salaries in Wyoming are now at very high levels, relative to model salaries, salaries in neighboring states, salaries for other professional occupations, and salaries for other comparable workers in the state. Wyoming is now ranked at the very top of the United States in terms of the relative attractiveness of the teaching profession. While model salaries are somewhat lower than actual salaries, model salaries still exceed average salaries in all comparison states. Relative to the pay of other workers, actual salaries are the highest in the country and model relative salaries rank in the top third of the nation.

However, overall turnover rates have remained relatively unchanged over this period. This may be in part because turnover rates in Wyoming are now very low and are more likely related to retirements and other factors than to salary. Teachers are actively recruited from other states, although the quality of the institutions that teachers come from has not become more selective over time. While there may still be improvements as new positions become available, existing trends suggest little quality responsiveness to the salary increases.

Based on this analysis, Wyoming model salaries are at the top of regional salaries, enabling Wyoming to recruit teachers from many surrounding states and to maintain very low turnover rates. The model funding has enabled school districts to provide salaries that are highly competitive nationally. Wyoming is positioned to allow districts to compete more aggressively for teachers from more selective higher education institutions in the area.

**Chapter II**  
**Labor Market for**  
**Non-Teachers Employed**  
**by K-12 Districts**  
**in Wyoming**

## Executive Summary

This report focuses on indicators related to non-teaching staff positions, documenting the labor market conditions for these positions using metrics that are based on rapidly available data sources that track current conditions. This report focuses on two sets of indicators: comparative average annual wages for related occupations, and trends in turnover rates.

In general, salaries in non-teaching occupations in schools are competitive with other private and state government employers, with school employees typically making higher average annual salaries.

School administrators also appear to be relatively well paid compared to other management occupations, although chief executives and financial managers in the private sector have higher compensation. Principals have higher salaries than general management occupations in both the private sector and other public sector jobs, and salaries in Wyoming for principals exceed those in other states in the region by about 15 percent.

Librarians, social workers, and counselors have significantly higher salaries: the premium relative to annual salaries in other sectors is around 20 percent. Salaries for classified staff positions (janitors, food preparation workers, bus drivers) also tend to be higher than their market counterpoints, as do salaries for aides who make more about 10 percent more than teaching assistants or other personal support occupations. Salaries for psychologists, network administrators, and secretarial and clerical staff are much closer to market salaries. Nurses and speech pathologists are paid less in schools than elsewhere.

These results should all be viewed with the understanding that annual salaries do not reflect different hours and weeks of work or other benefits. On a weekly comparison, salaries in schools exceed salaries in other sectors for nearly every occupation considered.

Turnover rates have been fairly stable across occupational groups since 2002, with rates ranging from 10 to 15 percent for administrators, secretaries and clerical staff, and other professional staff. However, rates for aides and classified staff have shown a five percentage point rise since 2008. Turnover rates are roughly comparable with those for state government employees, and are lower than the rates in many other industries.

## Data Sources and Classification of Non-Teaching Occupations

The indicators presented below compare salary or turnover rates for elementary and secondary school employees with private sector or state government employees. The principal data used come from the Wyoming Department of Workforce Services (DWS), which conducts a variety of surveys of employers in Wyoming. The primary data source used for the wage comparisons is the Occupational Employment Statistics (OES) Survey. This is a survey conducted of a sample of employers in Wyoming each quarter. The May results report mean wages by occupation. For this report, the DWS provided disaggregated results for (1) Elementary and Secondary schools in the local government sector (NAIS code 6111), (2) All private sector employees, and (3) State and local government employees. The OES is a sample of employers, so the specific employers that appear in the survey each year differ. Because these results are for occupational classifications and sampling differences in employers occur each year, comparisons over time are less appropriate to make.

Non-teaching positions in the Occupational Employment Statistics survey (OES) are coded using Bureau of Labor Statistics Standard Occupation Classification (SOC) codes. These codes first provide a two-digit general occupational group (for example, “Management Occupations,” “Community and Social Service Occupations,” or “Healthcare Practitioners and Technical Occupations”). The SOC codes used also include a second four-digit code that specifies a narrower occupation (for example, “Education Administrators--Elementary and Secondary School” or “Registered Nurses”).

The tables reported in the body of this report include both the larger occupation groups and the narrower selected specific occupations that include many individuals employed by elementary and secondary schools. The full list of OES occupations included in elementary and secondary schools as reported by the DWS is included in Appendix D, along with the number of employees sampled in each occupation. Missing cells in this table indicate that there were not enough individuals in the occupation to report the salary information.

The turnover statistics by occupation come from the Fall Staffing files from the Wyoming of Education (WDE). The data include all individuals (1) Who do not have a teaching assignment as part of their positions, and (2) Who have a position with at least FTE .50.

In order to have large enough groups for statistically valid comparisons, assignment codes listed in the WDE staffing files were grouped into categories to facilitate comparisons with the relevant markets and to calculate turnover rates. Occupations were grouped based on several factors: (1) Positions with the same Wyoming model funding salary were always aggregated, (2) WDE assigned “employee class” as well as the WDE general headings indicating the nature of the assignment, and (3) Positions with similar levels of required education (e.g., college degree required, license or certification required) were grouped.

The following occupational groups were used with the WDE staffing files:

1. **School and Central Administration**

This includes the assignment codes of Principal, Assistant Principal, Superintendent, Assistant Superintendent, and Business Manager. Each of these positions is associated with a specific salary in the Wyoming funding model.

2. **Professional Staff**

This includes many of the occupations that require a college degree. These include all licensed or certified positions, all of which are funded using the teacher salary in the funding model. Licensed or Certified professionals include Librarians, Counselors, Psychologists, Social Workers, and Nurses. The Professional staff category also includes Library and Media Technicians, who are also listed as Computer Technicians. Finally, this category includes all positions classified by the WDE with an employee class of “Administration” but that are not included in the above category. These include positions like Special Education Director and Human Resource Director, for example.

3. **Secretary/Clerical Staff**

This category includes all positions coded as Secretary/Clerical by the WDE. This includes the funding model categories of School Secretary, School Clerical, Central Office Secretary, as well as a number of other secretarial and clerical positions.

4. **Other Classified Staff**

This occupation group includes all remaining classified positions, with the exception of supervisory aides. This group aggregates all Operations and Maintenance positions (Custodians, Groundskeepers, Maintenance), Food Service, Transportation, Other Classified Student Support positions.

5. **Supervisory Aides**

Supervisory Aides include all regular Special Education aides, including Instructional, Student support, Playground, Library/Media, Special Education, Title I, and Transportation, among others.

## How Do Salaries in K-12 Schools Compare to Market Salaries for Non-Teachers?

In many ways, monitoring market pressures on non-teaching staff salaries is less difficult than monitoring teaching salary pressures. Teachers have few exact private sector counterpart occupations, and leaving the public school teaching profession generally means choosing a different career. In contrast, many of the staff positions in schools do have counterparts in other industries, allowing easier transitions to a different employer and thereby allowing for more precise measures of specific market pressures.

However, there are still a number of differences between non-teaching positions in elementary and secondary schools and their counterpart positions for other employers.

- First, the **contract hours worked differ across the sectors**. Elementary and secondary school have nine-month contracts for a number of positions. As a result, some of the comparisons include both monthly and annual salary comparisons for positions in public schools that are typically on 10 month contract. According to the Bureau of Labor Statistics, salaried professional workers typically receive eight paid holidays and two to three weeks of paid vacation depending on the length of service.<sup>4</sup> Accordingly, the analysis uses 37 weeks of work for teachers and related occupations and 47 weeks of work for non-school employers.
- Second, **retirement and health benefits** are typically more generous than those for many private employers. However, little information is available for benefits comparisons across occupations.
- Third, even similar **occupational titles may involve significantly different duties** in another sector—for example, chief executives or computer technicians for private employers may have a substantially different scope of activities than their counterparts in elementary and secondary schools.
- Finally, the **data sources used in this report do not report age or work experience**, leading to potentially different wages due to other factors than simply market differences.

With these caveats in mind, **Tables 1** through **5** present the latest comparisons between salaries in public schools, private sector employees, and state government employees.

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<sup>4</sup> For details, see Bureau of Labor Statistics “Paid leave in private industry over the past 20 years,” *Beyond the Numbers: Pay and Benefits Bulletin*, August 2013, Vol 2. No. 18. <http://www.bls.gov/opub/btn/volume-2/paid-leave-in-private-industry-over-the-past-20-years.htm> Accessed on Sept. 15, 2015

### Category 1: Administrative Positions

**Table 1** reports the average annual salary for Administrators. This table makes several comparisons. The first column in the top panel reports the average salary that would be generated by the funding model—that is, taking the experience and education of each administrator, it computes the model salary for that individual and averages across all administrators. The second column reports the actual average salary as paid by districts.

The bottom panel shows that average administrator and management salaries reported in the Occupational Employment Statistics. These compare salaries for given occupational classifications in public schools, private employers, and other public employers.

**Table 1: K-12 Administrative Positions**

<b>Model Title</b>	<b>Funding Model Weighted Average Salary (2014-15)</b>		<b>Actual Average Salary WDE Files (2014-15)</b>
Superintendent	\$112,820		\$136,922
Assistant Superintendent	\$89,865		\$131,248
Business Manager	\$76,749		\$93,321
Principals	\$85,856		\$95,134
Assistant Principals	\$72,037		\$88,792
<b>OES Data</b>			
<b>OES Occupation Title</b>	<b>K-12 Schools, Local Government</b>	<b>Private Industry</b>	<b>State and Other Local Employers</b>
All Management Occupations	\$96,466	\$92,290	\$81,684
Chief Executives	\$129,050	\$152,430	\$115,880
General/Operations Managers	\$119,020	\$101,730	\$91,674
Financial Manager	\$93,710	\$108,620	\$83,230
Education Administrator, Elem./Sec. School	\$93,490	--	--

Source: WY Department of Workforce Services provided analysis of Occupation Employment Statistics Survey, May 2014. Funding Model Weighted Average Salaries from Continued Review of Educational

Resources in Wyoming, 2014 and author's calculations. Model weighted average salaries are adjusted to reflect predicted model salary based on experience, education, and RCA.

**Table 1** shows that actual salaries exceed model salaries by about 20 percent for central administrators, and by about 10 percent higher for school administrators (principals and assistant principals). The OES surveyed salaries are in line with those reported by the WDE.

The bottom panel shows that management salaries in public schools in general exceed those in private industry by about \$4,000 and other public employers by about \$15,000. Salaries for superintendents and financial managers tend to be lower than their counterparts in the private sector but above those in the public sector. Obviously, there is not an exact counterpart for school principals in other industries, but principal salaries also exceed salaries for management occupations on average. Note that this does not adjust for weeks of work. Typically, school principals work about 10 months a year, or 43 weeks, as compared with a minimum of 47 weeks for other administrators.

**Table 2** compares the salaries of elementary and secondary school principals in Wyoming with other states in the region, as reported in the OES. As with teachers, Wyoming salaries for principals are well above those of all other states in the region. Wyoming ranks 16<sup>th</sup> in the nation for salaries for principals, up from 20<sup>th</sup> in 2009. Salaries are about 15 percent higher than the average for other principals in the region, and are about three percent higher than the next highest regional state (Nebraska).

**Table 2: Elementary and Secondary School Administrator Salaries, Wyoming and Comparison States, OES 2009 and 2014**

Elementary and Secondary School Administrators	May 2009	May 2014
WY Funding Model Weighted Average Salary		\$85,856 Rank = 27
WY actual	\$86,030 Rank = 20	\$93,370 Rank = 16
CO	\$79,310	\$84,370
ID	\$73,240	\$78,880
MT	\$65,120	\$74,320
ND	\$70,960	\$84,710
NE	\$80,950	\$90,490
SD	\$65,590	\$74,900
UT	\$78,940	\$85,960

Source: Occupation Employment Statistics Survey, May 2014.

## Category 2: Professional Staff

**Table 3** reports salaries for professional occupations. Most require a college degree and many additionally require certification or a license. Except for computer technicians, the other professional occupations reported below all have model salaries equivalent to teachers.

Weeks of work are particularly different across sectors for professional workers. Assuming 185 contract days, this translates into 37 weeks of work a year. The numbers in parentheses represent weekly wages, with the conservative assumption that non-school employees work 47 weeks a year.<sup>5</sup>

**Table 3: Average Annual and Weekly Salaries for Professional Staff Positions, 2014**

OES Occupation Title	K-12 Schools OES	Private Sector OES	State and other local Government OES
Clinical, Counseling, School Psychologists	\$69,580 annual (\$1,880/week)	\$73,760 annual (\$1,569/week)	\$69,300 annual (\$1,474/week)
Child, Family, and School Social Workers	\$61,580 annual (\$1,664/week)	\$40,730 annual (\$867/week)	\$56,410 annual (\$1,200/week)
Educational, Vocational, School Counselors	\$62,880 annual (\$1,699/week)	--	\$53,266 annual (\$1,133/week)
Mental Health counselors	--	\$52,810 annual (\$1,124/week)	--
Registered Nurses	\$51,460 annual (\$1,391/week)	\$57,340 annual (\$1,220/week)	\$63,683 annual (\$1,355/week)
Speech Pathologists	\$64,490 annual (\$1,743/week)	\$74,090 annual (\$1,576/week)	\$77,690 annual (\$1,653/week)
Librarians	\$59,520 annual (\$1,609/week)	--	\$45,433 annual (\$967/week)
Network and Computer System Administrators	\$61,840 annual (\$1,671/week)	\$62,170 annual (\$1,323/week)	

Source: Occupation Employment Statistics Survey, May 2014.

**Table 3** shows that for psychologists and counselors, salaries are comparable between elementary and secondary schools and other public sector jobs. Private sector jobs tend to be either higher paid (in the case of psychologists), or lower paid (in the case of social workers and mental

<sup>5</sup> For details, see Bureau of Labor Statistics “Paid leave in private industry over the past 20 years,” *Beyond the Numbers: Pay and Benefits Bulletin*, August 2013, Vol 2. No. 18. <http://www.bls.gov/opub/btn/volume-2/paid-leave-in-private-industry-over-the-past-20-years.htm> Accessed on Sept. 15, 2015

health counselors), although this is likely because the occupations in those sectors are more sharply delineated.

Nurses and speech pathologists, on the other hand, have lower salaries in the schools. Librarians tend to be higher paid, and computer technicians tend to have comparable salaries. However, for all occupations, comparisons of weekly wages put salaries in schools above those for private sector and other public sector workers.

### Category 3: Secretarial and Clerical Positions

**Table 4** reports secretary and clerical salaries. Secretarial and clerical positions are probably among some of the positions with the cleanest market counterparts, although contract hours differ between schools and other employers. Central office and school secretaries work 2080 hours, representing full time, full year work. School clerical staff have 1600 contract hours, representing 40 weeks of work. These are again compared to non-school employees with 47 weeks of work.

Average salaries are about \$1,000 more than model salaries. Actual salaries are close to market salaries for most of these positions. The only exception is secretaries, where school secretary salaries exceed salaries in both the public and private sector. Clerks have salaries that are close to market values in annual terms, but their shorter weeks of work produce significantly higher weekly salaries.

**Table 4: Average Annual Salaries for Secretarial and Clerical Positions, 2014**

Funding Model Weighted Average Salary	\$32,863		
District Average Actual Salary in WDE files	\$33,979		
OES Title	K-12 Schools	Private Sector	State Government
Clerks: Bookkeeping/Accounting/Auditing	\$39,360	\$36,420	\$40,215
Executive Secretaries and Admin. Assistants	\$45,630	\$45,650	\$45,373
Secretaries, (Not Legal, Medical, Exec.)	\$37,480	\$32,660	\$36,095
Office Clerks, General	\$31,840 annual (\$796/week)	\$31,530 annual (\$670/week)	\$30,874 annual (\$656/week)

Source: WY Department of Workforce Services provided analysis of Occupation Employment Statistics Survey, May 2014. Funding Model Weighted Average Salaries from Continued Review of Educational Resources in Wyoming, 2014 and author's calculations. Model weighted average salaries are adjusted to reflect predicted model salary based on experience, education, and RCA.

### Category 4: Other Classified Staff Positions

Schools employ a number of other classified staff. **Table 5** shows that these classified school employees tend to make substantially more than their non-school counterparts, both in the private sector and in other public sector jobs. The only exception is “Maintenance and Repair Workers,” who are paid more than other public sector employees but less than in the private sector. However, note that schools typically hire private contractors for more specialized repaired work; these workers are probably relatively highly skilled and are more likely to be employed in the private sector.

Operations and maintenance staff work the full calendar year, although food preparation and bus drivers work the 185 school contract days. As with the other tables, this table assumes that non-school employees work 47 weeks a year, however for many of these types of positions, it is likely that weeks of work are higher than for professional salaried positions.

**Table 5: Average Annual Salaries for Other Classified Staff Positions, 2014**

Funding Model Weighted Average Salary for operations and maintenance staff			\$32,810
District Average Actual Salary for Operations and Maintenance staff in WDE files			\$35,331
OES Title	K-12 Schools	Private Sector	State Government
Janitors and Cleaners (Not Maids/Housekeeping)	\$32,370	\$26,310	\$28,369
Maintenance and Repair Workers, General	\$39,620	\$43,400	\$38,457
All Food Prep/Serving	\$29,141 annual (\$788/week)	\$20,997 annual (\$447/week)	\$25,749 annual (\$548/week)
Bus Drivers, School or Special Client	\$32,520 annual (\$879/week)	\$26,990 annual (\$574/week)	--
Bus Drivers, Transit and Intercity	--	\$34,390 (\$731/week)	\$29,830 (\$635/week)

Source: WY Department of Workforce Services provided analysis of Occupation Employment Statistics Survey, May 2014. Funding Model Weighted Average Salaries from Continued Review of Educational Resources in Wyoming, 2014 and author’s calculations. Model weighted average salaries are adjusted to reflect predicted model salary based on experience, education, and RCA.

## Category 5: Supervisory Aides

The final job category in the model is “Supervisory Aides.” In the model, Supervisory Aides are not instructional aides—that is, they are playground monitors, lunchroom monitors, and others who provide supervision rather than instruction. The model also provides funding for tutors—licensed teachers who provide additional instruction.

However, it appears from the hiring data that most school districts hire some form of instructional aides—positions may provide both supervision and classroom support.

This occupation does not have an exact counterpart in the OES data. The occupational group to which Supervisory Aides, instructional aides, and other student support workers below is “Teaching Assistants” in the OES survey. However, it appears that these aides are paid about \$22,587 by districts, as compared to \$19,906 in the model. In the OES data, “Teaching Assistants” are paid \$28,500, implying that OES classifications and the WDE classifications are not well aligned.

However, aides do not have very clear private sector counterparts, and there were few positions listed for state employees that parallel this job. In contrast to the 3,500 teaching assistants reported by schools in the OES survey, there were only about 300 teaching assistants in the private sector. This occupation also tends to require a less specialized skill set. **Table 6** therefore also reports a few other occupations that require a similar level of training and similar expertise to enable richer comparisons.

Again, private sector counterparts typically work more weeks per year than teacher assistants. However, because these occupations are so diverse, weekly wages are not reported.

**Table 6: Average Annual Salaries for Supervisory Aides and Support Occupations, 2014**

OES title	K-12 Schools	Private Sector
Teacher Assistants	\$28,500	\$22,110
	Other Service Occupations	
Child Care Workers		\$21,840
Personal and Home Care Aides		\$ 21,740
Healthcare Support Occupations		\$30,030

Source: Occupation Employment Statistics Survey, May 2014.

## How do Turnover Rates Compare for Non-Teaching Occupations?

As with teachers, there is a second way to think about how competitive occupations in schools are with the broader labor market. Instead of looking just at salaries, this second set of indicators examines turnover rates. These rates will reflect the difficulty schools have in retaining individuals in these non-teaching positions. Rising turnover rates can signal that districts have more positions to fill and also that compensation may not be attractive enough to retain individuals in elementary and secondary school employment.

**Figures 1** through **6** present turnover rates for the occupational groups delineated above. Turnover rates are defined as the proportion of individuals in a given occupational class who are no longer employed in that class by the same district in the subsequent year. Turnover rates are calculated by including only individuals without a teaching component to their job to abstract from any influence of the teaching labor market. Only positions with at least .50 FTE are included. This is because the coding of many positions with small associated FTE (e.g., advisor) does not appear to be true turnover, but simply reflects temporary assignments. Turnover rates for individuals who are employed part time (<.50 FTE) are also likely to belong to a different market segment.

Individuals are not counted as exiting even if their assignment code changes, as long as the overall class of employment (e.g., aide, administration) remains the same. For example, if Jane is an assistant principal this year, and next year chooses to become a teacher, she is counted in the exit rate for administrators. However, if she instead becomes the principal next year, this is counted as continuous employment in the same occupational class as she remained an administrator, and she is not counted as an exit.

Each figure includes two series. The first is turnover rate of all employees in that class. The second is the turnover rate of new hires—individuals not employed in that district in the previous year. This second turnover rate is reported because exits of new hires represent higher training costs—brand new hires require more district time and resources to achieve high productivity in their jobs. New hires are also more likely to be of the same age, and exits are not likely to be related to retirement.

### Turnover Rates Within Elementary and Secondary Schools by Occupational Group

The figures below largely show that turnover rates have remained roughly constant since 2002, with a slight rise since 2008. In general, exit rates of new hires are higher than the overall exit rate, which is to be expected as new hires are discovering whether the position is a good match. Exit rates tend to be highest for aides and non-teaching classified staff. They are lowest for teachers, administrators, and office support staff.

For both supervisory aides and other classified staff, exit rates do show a steady increase since 2008. About 10 to 15 percent of these workers in 2002 had exited these positions one year later. Exit rates in 2013 were about five percentage points higher.

Figure 1: Annual Exit Rates Across Occupations in K-12 Schools

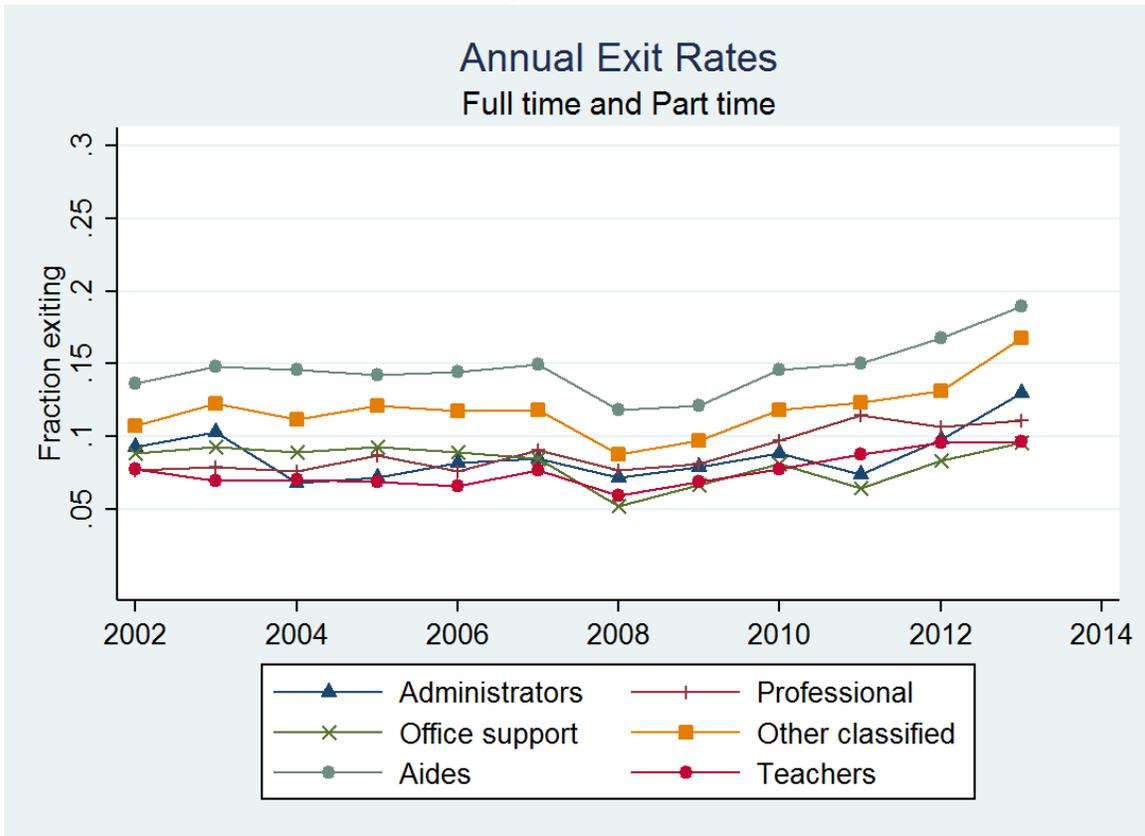


Figure 2: Annual Exit Rate for School and District Administrators

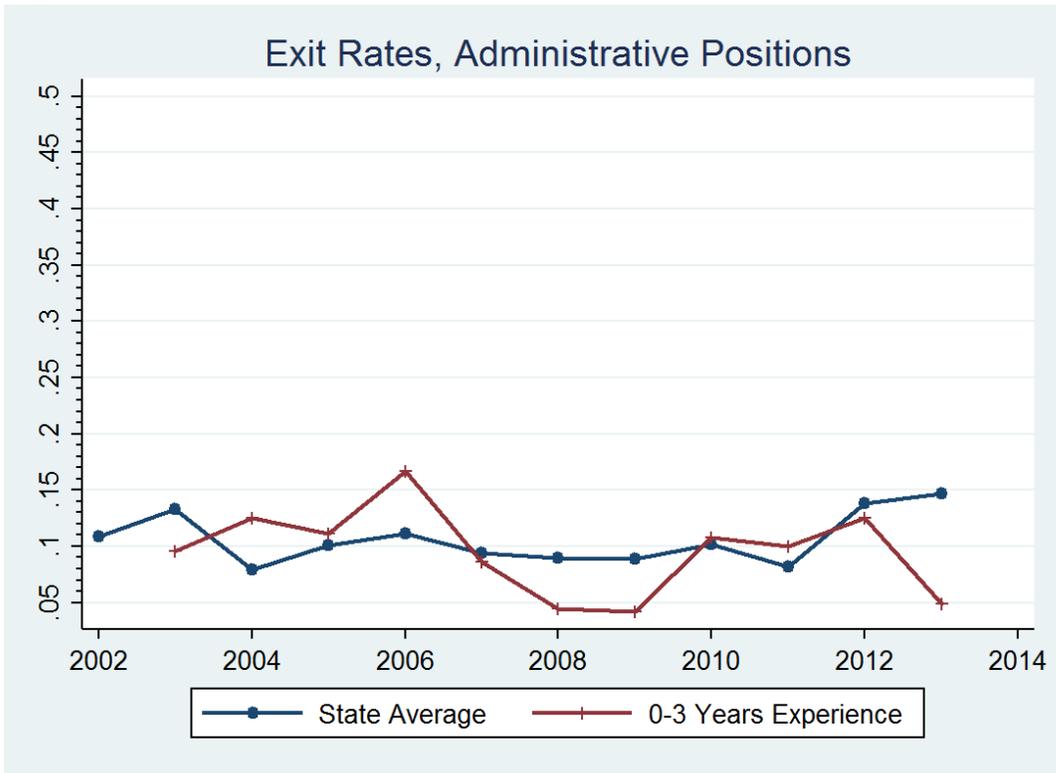


Figure 3: Annual Exit Rate for Professional Staff Positions

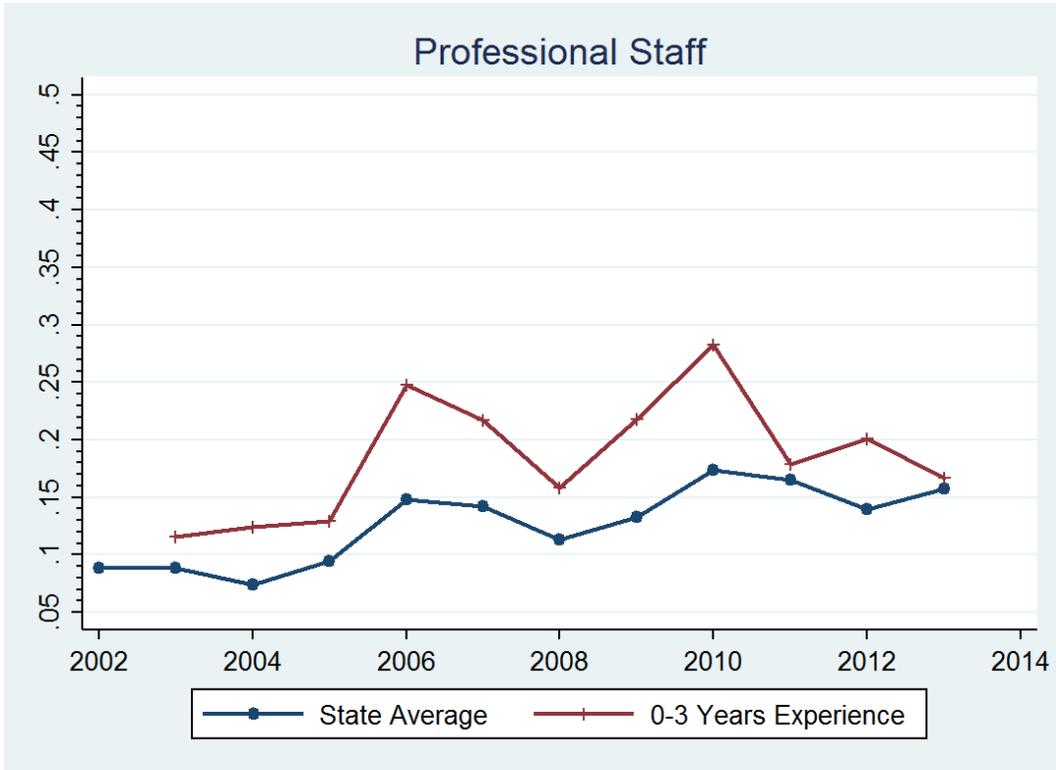


Figure 4: Annual Exit Rate for Secretaries and Clerical Staff Positions

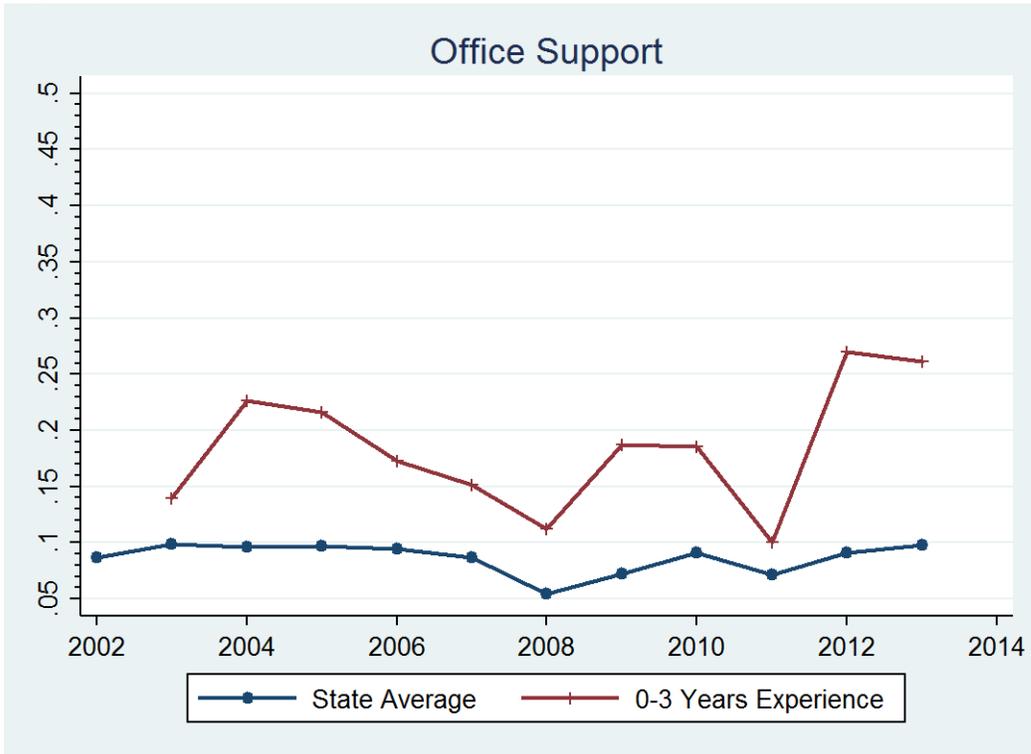


Figure 5: Annual Exit Rate for Maintenance and Operations, Food Service, Transportation, and Other Classified Staff

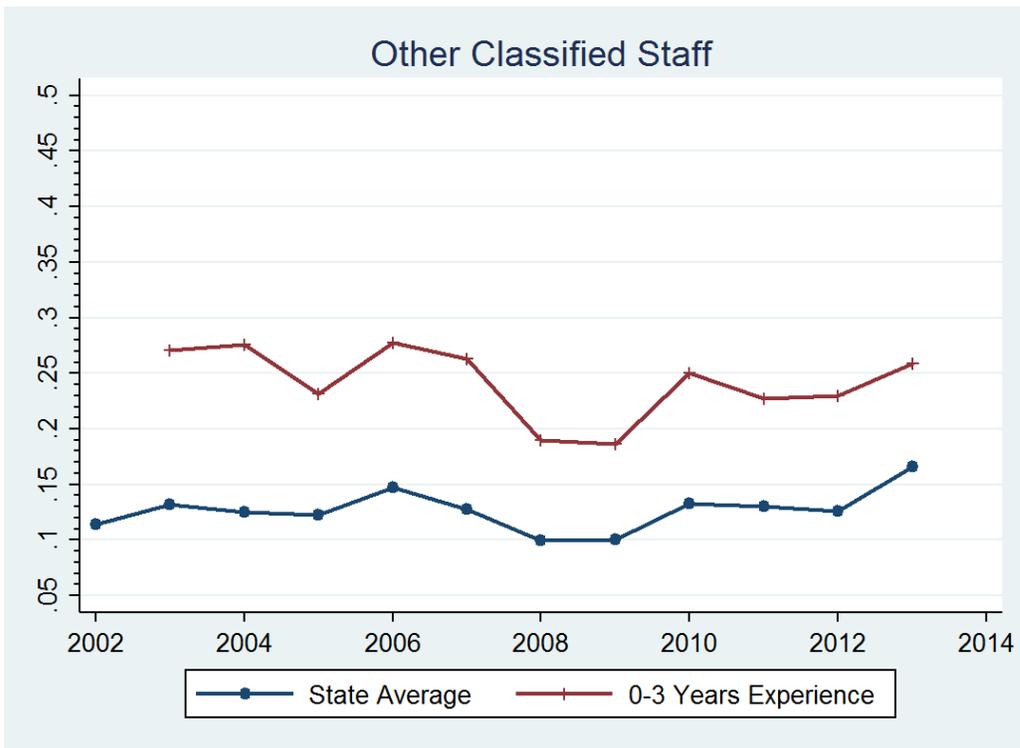
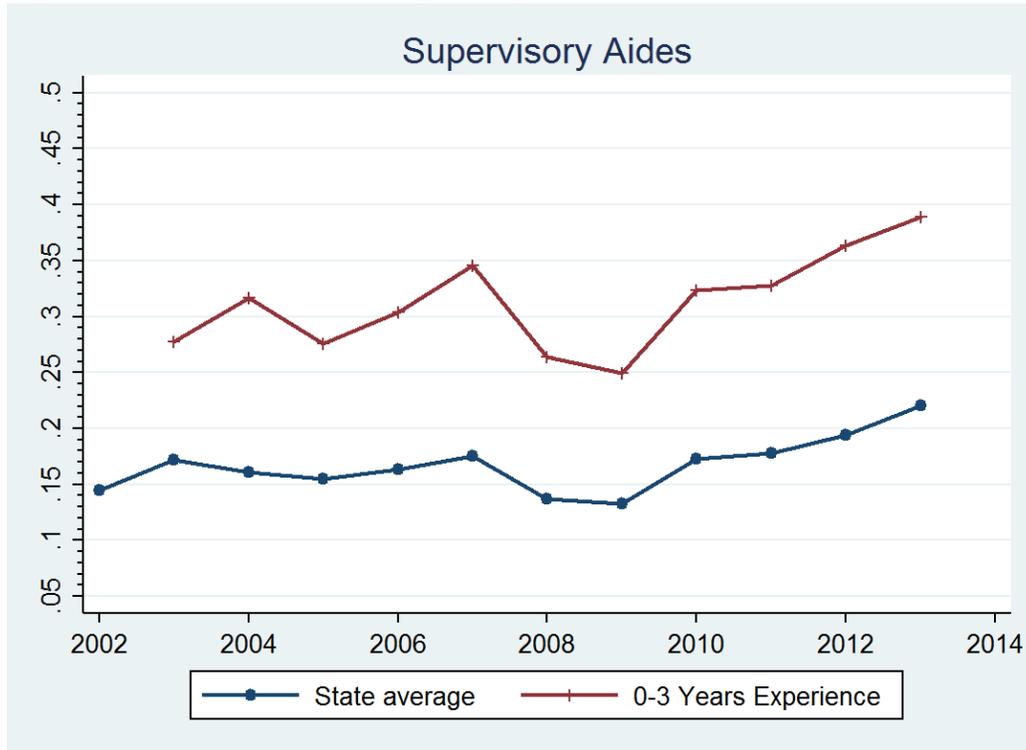


Figure 6: Annual Exit Rate for Supervisory Aides



### Comparing Turnover Rates for Education and Other Industries

It is difficult to compare turnover rates for school employees with other occupations, as the data sources and methodologies used are substantially different. However, to put these turnover statistics into perspective, it is useful to present a few comparisons outside of education.

**Table 7** reports the quarterly industry turnover statistics calculated by industry by the Wyoming DWS for two quarters in 2010. The industries most related to education are reported: manufacturing, mining, agriculture, and other similar industries are not included because the labor markets are less related. These turnover statistics are calculated each quarter. The calculation includes the sum of the number of individuals newly hired, the number of individuals who exited, and the number of individuals who were both hired and exited in the same quarter. This is divided by the total number of positions in the sample to generate the turnover rate. This calculation is somewhat complicated for schools because of the school calendar. As a result, **Table 7** reports turnover for 2 quarters, in the middle and at the beginning of the school year.

**Table 7: Industry Turnover Rates, 2010**

<b>Industry</b>	<b>Turnover, Q1</b>	<b>Turnover, Q3</b>
Education Services	11.6	18.5
All Industries	21.7	32.2
Retail Trade	22.6	36.0
Information	15.5	19.4
Financial Activities	17.2	20.8
Professional and Business Services	30.7	40.6
Health Services	17.3	22.1
Leisure and Hospitality	35.5	51.0
Public Administration	10.5	20.1

**Table 7** also shows that the “Education Services” industry, which includes higher education as well as elementary and secondary schools, has some of the lowest turnover of any industry. It is roughly comparable to Public Administration, confirming the results about that state government employees and school employees have similar turnover behavior.

## Conclusions

- Funding model salaries for the **highest level administrators** are low compared with their counterparts in the private sector and other public sector jobs. Actual salaries for superintendents, assistant superintendents, and business managers are in line with the market, but these salaries exceed model salaries by about 20 percent.
- Similarly, actual salaries for **principals** appear to be closer to market, both in comparison with other management occupations and within the region. Actual salaries place principals at 3 percent higher pay than the next highest paid state in the area. However, model salaries for principals are significantly lower, ranking in the middle of the distribution of neighboring states and in the bottom half of the US.
- Salaries for **other professional staff** are in line with the market. This is particularly true when adjusting for weeks of work.
- **Secretarial and clerical workers** are paid slightly more than the model predicts, but the discrepancy is much smaller than for administrative positions. Actual salaries are in line with the market.
- **Other classified staff** positions are paid highly relative to market. This is true for both model salaries and actual salaries, and there is a particularly large premium when adjusting for weeks of work.
- Comparisons for **aides** are the most difficult to make, as most school districts make hiring decisions that are significantly different from the model recommendations. Most districts hire individuals who act as instructional aides, rather than only supervisory aides. There are also not clear counterparts to these positions outside of K-12 schools, but relative to other support services occupations, these workers are highly paid.

## Appendix A: Data Sources

- The Wyoming department of education staffing files report salaries for all teachers in Wyoming, along with details about their experience level, assignment type, and FTE. These files are merged with school level characteristics reported in the Common Core of Data to identify teachers working in small schools, rural schools, or schools with varying levels of student minorities.
- The Digest of Education Statistics (DES) reports average teaching salaries for all states over time.
- The American Community Survey (ACS) is conducted by the US Census Bureau. It is essentially a mini-census conducted in each year since 2000. This is a survey of individuals, and reports an individual's occupation, salary from employment, age, education, race, gender, hours and weeks of work. This survey is used to adjust salaries of non-teachers and teachers in others states to match the characteristics of teachers in Wyoming.
- The Occupational Employment Statistics survey (OES) This is a quarterly survey conducted by the Bureau of Labor Statistics of employers who are paid wage or salary income. Self employed individuals, owners and partners in unincorporated firms, and household workers are not included in this survey. This survey reports the number of individuals in each occupation in each state and the average salary.

## **Appendix B: Comparable Professional and Technical Occupations**

Teacher salaries reported in the Occupational Employment Statistics are compared to the salaries of other professional and technical occupations. These include occupation in the following categories:

- Management Occupations
- Business and Financial Operations Occupations
- Computer and Mathematical Science Occupations
- Architecture and Engineering Occupations
- Life, Physical, and Social Science Occupations
- Community and Social Services Occupations
- Legal Occupations
- Education, Training and Library Occupations
- Arts, Design, Entertainment, Sports, and Media Occupations
- Healthcare Practitioner and Technical Occupations

Teachers are not compared to employees in other occupations. The excluded occupational categories are

- Personal Care and Service Occupations Healthcare Support Occupations
- Protective Service Occupations
- Food Preparation and Serving Related Occupations
- Building and Grounds Cleaning and Maintenance Occupations
- Sales and Related Occupations
- Office and Administrative Support Occupations
- Farming, Fishing, and Forestry Occupations
- Construction and Extraction Occupations
- Installation, Maintenance, and Repair Occupations
- Production Occupations
- Transportation and Material Moving Occupations
- Military Specific Occupations (not surveyed in OES)

## **Appendix C: Estimating Comparable Non-Teaching Wages**

Teaching wages are compared to the wages of non-teachers using the American Community Survey. To make this comparison, the analysis used ACS data from 2001 through 2013. The sample was restricted to all employed individuals with a bachelor's degree between the ages of 22 and 65 who were employed at least 27 weeks in the year and usually worked at least 35 hours a week. Individuals living in group quarters were dropped. Self-employed individuals were also dropped. Teachers were defined as those working in the public sector. Individuals in each survey year reported their income from salary and wages for the previous year.

Separate regressions were run for teachers and non-teachers. These regression included age, age squared, an indicator variable for female, an indicator variables for race, an indicator for whether or not the individual was enrolled in school, an indicator variable for whether or not the individual held an advanced degree, and usual hours worked, and indicators for categories of hours of work and weeks of work. These categories were for working 35 to 48 hours, 49-59 hours, or 60 or more hours a week; and working 27-39 weeks a year, 40-47 weeks a year, 48-49 weeks a year, or 50-52 weeks a year.

The analysis then calculated the average characteristics of teachers in Wyoming in each year. The comparable non-teaching wage was then calculated by predicting wages using the average characteristics of Wyoming teachers. Teaching wages in other states were similarly adjusted.

Appendix D: Occupation Employment Statistics Survey, May 2014

SOC Code	Occupation Title	Elementary and Secondary Schools (NAIS 6111)		Private ownership All-Industries May 2010		State Government All-Industries May 2010	
		Number in Survey	Mean Annual Earnings	Number in Survey	Mean Annual Earnings	Number in Survey	Mean Annual Earnings
<b>Management Occupations</b>							
11-1011	Chief Executives	40	\$129,050	80	\$152,430	--	\$115,880
11-1021	General and Operations Managers	60	\$119,020	4,870	\$101,730	370	\$91,674
11-3031	Financial Managers	60	\$93,710	430	\$108,620	100	\$83,230
11-9032	Education Administrators, Elem. and Secondary School	440	\$93,490				
<b>Computer and Mathematical Occupations</b>							
15-1142	Network and Computer Systems Administrators	70	\$61,840	240	\$62,170	--	\$61,490
15-1150	Computer User Support Specialists	60	\$45,970	230	\$43,930	90	\$48,070
<b>Life, Physical, and Social Science Occupations</b>							
19-3031	Clinical, Counseling, and School Psychologists	130	\$69,580	100	\$73,760	10	\$69,300
<b>Community and Social Services Occupations</b>							
21-1012	Educational, Vocational, and School Counselors	340	\$62,880	10	\$41,460	110	\$53,266
21-1021	Child, Family, and School Social Workers	130	\$61,580	310	\$40,730	--	\$56,410
<b>Education, Training, and Library Occupations</b>							
25-4021	Librarians	140	\$59,520	10	\$57,740	250	\$45,433
25-9031	Instructional Coordinators	180	\$70,440	50	\$65,170	60	\$60,520
25-9041	Teacher Assistants	2,990	\$28,500	50	\$28,500	330	\$22,110
<b>Healthcare Practitioners and Technical Occupations</b>							
29-1111	Registered Nurses	160	\$51,460	--	\$57,340	1,850	\$63,683
29-1127	Speech-Language Pathologists	140	\$64,490	130	\$74,090	20	\$77,690

		Elementary and Secondary Schools (NAIS 6111)		Private ownership All-Industries May 2010		State Government All-Industries May 2010	
SOC Code	Occupation Title	Number in Survey	Mean Annual Earnings	Number in Survey	Mean Annual Earnings	Number in Survey	Mean Annual Earnings
<b>Food Preparation and Serving-Related Occupations</b>							
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	100	\$ 34,420	200	\$ 45,020		
35-2012	Cooks, Institution and Cafeteria	450	\$ 27,840	1,920	\$ 29,270	280	\$ 28,388
35-2021	Food Preparation Workers	70	\$ 35,330	580	\$ 24,420	190	\$ 23,562
35-3021	Combined Food Preparation and Serving Workers Counter Attendants, Cafeteria, Food Concession, and	110	\$ 25,310	1,110	\$ 21,000	40	\$ 22,010
35-3022	Coffee Shop	90	\$ 29,650	5,430	\$ 18,030	30	\$ 19,970
<b>Building and Grounds Cleaning and Maintenance Occupations</b>							
37-1011	First-Line Supervisors/Managers of Housekeeping and Janitorial Workers	80	\$ 43,110	430	\$ 34,210	110	\$ 44,319
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	970	\$ 32,370	2,570	\$ 26,310	660	\$ 28,369
37-3011	Landscaping and Groundskeeping Workers	60	\$ 32,300	1,370	\$ 27,810	410	\$ 30,110
<b>Office Support Occupations</b>							
43-6014	Secretaries, Except Legal, Medical, and Executive	890	\$ 37,480	2,930	\$ 32,660	680	\$ 36,095
43-9061	Office Clerks, General	120	\$ 31,840	4,840	\$ 31,530	540	\$ 30,874
<b>Natural Resources, Construction, and Maintenance Occupations</b>							
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	60	\$ 46,660	1,290	\$ 52,870	40	\$ 50,285
49-9071	Maintenance and Repair Workers, General	260	\$ 39,620	2,840	\$ 43,400	530	\$ 38,457
<b>Production, Transportation, and Material Moving Occupations</b>							
53-3022	Bus Drivers, School or Special Client	1,010	\$ 32,520	230	\$ 26,990		
53-3021	Bus Drivers, Transit and Intercity			210	\$ 34,390	80	\$ 29,830

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