

Current Status of Cost Pressures on Teacher Salaries in Wyoming

**Report to the
Joint Appropriations Committee and
the Joint Education Committee**

September 2023

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Overview of Cost Indicators

The 2011 to 2022 reports “Cost Pressures on Teacher Salaries in Wyoming” included metrics for monitoring changes in cost pressures on teaching salaries. This report updates the most salient of these metrics to identify pressures related to labor market trends, demographic patterns, and teacher turnover. The indicators are summarized in Table 1. Details about each metric and figures reporting longer term trends follow.

SUMMARY

- **Teaching wages in Wyoming in May 2022 were about 80 percent of average annual wages in comparable occupations.** The United States (U.S.) average and average in neighboring states and North Dakota remained close to 75 percent.
- **The ratio of teaching salaries to comparable occupations in Wyoming has consistently eroded over the last several years,** with a particularly sharp decline in the last year observed. It is now significantly lower than in any year recorded since the series began in 2003-04. Comparison of business and health occupations in Wyoming have experienced particularly sharp wage increases in the last 2 years.
- **Teaching salaries in Wyoming have remained flat over the past several years.** In adjacent states and the U.S. as a whole, the increase in teaching salaries has been larger, at 1- 2 percent per year.
- Teacher wages in Wyoming are 6.6 percent higher than in adjacent states and North Dakota. **Wyoming’s advantage relative to the region has fallen in half since 2018/19. Wyoming’s 2022/23 K-12 education resource block grant model (model) teacher salaries lie 3 percent below the average salary in the region.**
- The lowest paying districts in Wyoming have much higher salaries than the lowest paying districts in other states in the region, salaries in the highest paid districts are closer.
- **The exit rate of teachers jumped in the last two years. Exit rates for new and midcareer teachers are the highest rates recorded in Wyoming.** Exit rates for retirement age teachers had a large jump after the pandemic, and were below average last year, indicating a return to more normal exit rates for older teachers.
- **Demographic factors—student enrollment and teacher retirement—are not significant contributors to cost pressures** on salaries.
- **Three factors significantly limit the pipeline of new teachers** in Wyoming compared to other states in the region: 1) there has not been a well-developed alternative certification program, 2) the ratio of individuals who take the teaching certification exams relative to the number of new teaching program completers is the lowest of all other states in the region, and 3) the certification exam pass rate is the lowest of all states in the region.

Table 1: Summary of Indicators of Cost Pressure Sources

	Current Status	Previous Year	10 Year Range And Average
Average Teaching Wages, 2021/22 OEWS data	\$62,009	\$62,774	\$58,390-62,774 Average = \$59,636
Average Teaching Wages, 2022/23 NEA data	\$61,437	\$60,819	\$56,583-61,437 Average = \$58,957
Ratio of teaching wages to other professional/technical occupation wages in WY, 2021/22 OES data	.83	.87	.83 – .94 Average = .89
Ratio of teaching wages to other professional/technical occupation wages in adjacent states, 2021/22 OEWS data	.72	.74	.72 – .76 Average = .75
Ratio of WY average teaching salaries to average teaching salaries in adjacent states + ND, 2021/23 NEA data	1.07	1.10	1.07-1.21 Average=1.13
Percent new hires with BA from another state	56%	53%	51%-58% Average = 56%
Past student enrollment change, Fall 2021 to Fall 2022	-0.4%	.1%	-2.0% – 1.7% Average = .4%
Projected student enrollment growth, Annual rate Fall 2023-Fall 2031			-0.3%
Percent Teachers 60 and older, 2022/23	6.6%	6.5%	6.5-9.4% Average = 8.5%
Exit Rate all Teachers, 2021/22	11.7%	11.0%	9.1%-11.7% Average = 10.2%
Exit Rate Teachers Ages 60+, 2021/22	25.2%	32.2%	24.1%-32.2% Average = 26.9%
Exit Rate Teachers with < 3 years' experience, 2021/22	15.7%	13.5%	11.9%-15.7% Average = 13.5%
Percent New Hires, 2022/23	12.2%	9.8%	7.1%-12.2% Average = 10.1%

Current State of Model and Actual Teaching Salaries in Wyoming

Figure 1 shows that teacher salaries in Wyoming have increased very modestly since 2010. Actual average salaries grew by 10 percent from 2010/11 to 2022/23, or about 1 percent per year. In contrast, weighted average model salaries were essentially unchanged from \$53,046 in 2010/11 to \$53,506 in 2022/23. The 2022/23 actual average regular salaries for teachers were \$61,962. This exceeds model average salaries by about 16 percent--the largest difference since the current funding model has been in place. With the ECA enacted during the 2023 session, 2023/24 model salaries are about 4 percent higher (\$55,763).

Figure 1.1: Actual Average and Model Weighted Average Teaching Salaries, 2010/11 – 2022/23 School Years

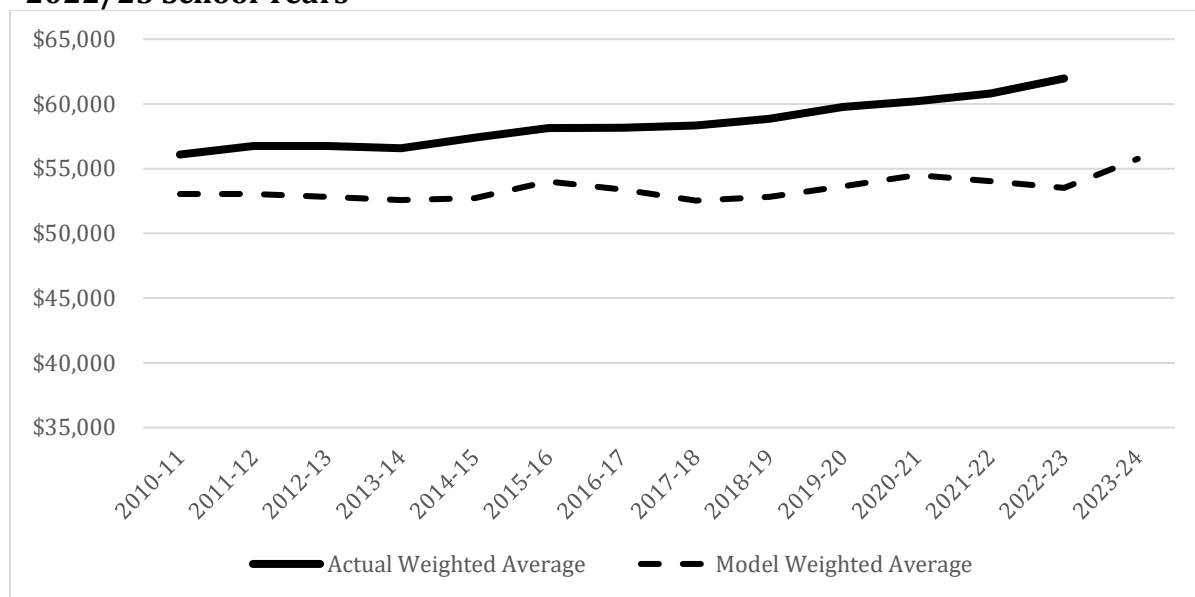
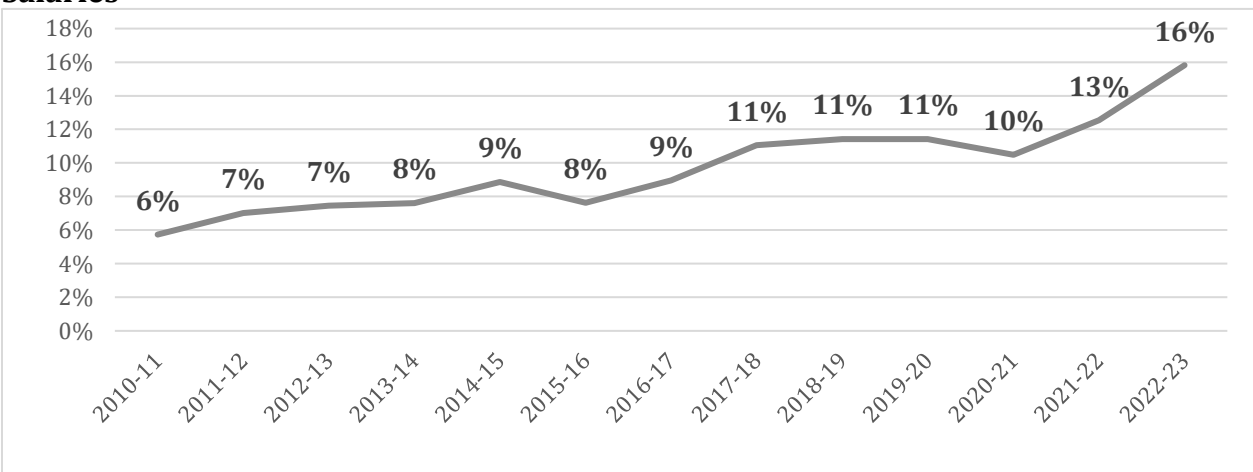


Figure 1.2 Percent Difference Between Actual and Model Weighted Average Teaching Salaries



Source: WY LSO and WY Department of Education.

INDICATOR 1: Ratio of Teaching Wages to Wages of Comparable Professionals

DATA SOURCES: The U.S. Department of Labor reports salaries by occupation in the Occupational Employment and Wage Statistics (OEWS) survey each November and May. The OEWS data is a survey of employers only, and it does not include personal characteristics of workers. As a result, these data cannot be used to adjust for workers' characteristics (e.g., work experience, education, hours of work) or benefits. The data in this report come from the May 2022 series, the most recent year available.

METRIC: *Teachers* include all elementary, secondary, and special education teachers. Wages of preschool teachers are not included in the teacher average, as these typically are not public employees. Trends in teaching wages are compared to trends in two other reference groups. *Professional and technical occupations* are defined by OEWS (OCC Codes 11-000 through 29-999). These include occupations in management, business operations, computers, legal professions, health care practitioners, social services, and other skilled profession fields. (Not included are retail or personal services, health care technicians, agricultural or manufacturing workers, food service workers and other similar occupations). *Comparable occupations* are a subset of these occupations with skills and attributes most like teaching.¹ These occupations are listed in Appendix A.

FINDINGS: **Figure 2** reports the trend in annual average wages for teachers, other professional and technical workers, and the subset of most comparable occupations; these are reported for Wyoming from May 2006 through May 2022. The figure shows that average teaching wages remained relatively flat from May 2012 to May 2022 (average of \$62,009 in May 2022). In contrast, wages in professional and technical occupations experienced a sustained rise. The growth rate in the last year was 3.4 percent and in the 3 years prior was between 1.5 percent per year (average of \$75,015 in May 2022).

This sustained wage increase also appears in the narrower set of comparable occupations for Wyoming, with an average salary in May 2022 of \$77,196. The particularly rapid growth in the last year (7.6 percent) was fueled by especially sharp rises in health occupations (nurses, occupational therapists, and physical therapists) and business occupations (accountants, underwriters, human resource officers). This is shown in **Figure 2.2**. These occupations are particularly notable as the largest occupational groups that are comparable to teachers.

¹ See Allegretto, 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.

Figure 2.1: Average Annual Wages for Teachers and Comparable Workers in Wyoming, May 2006 to May 2022

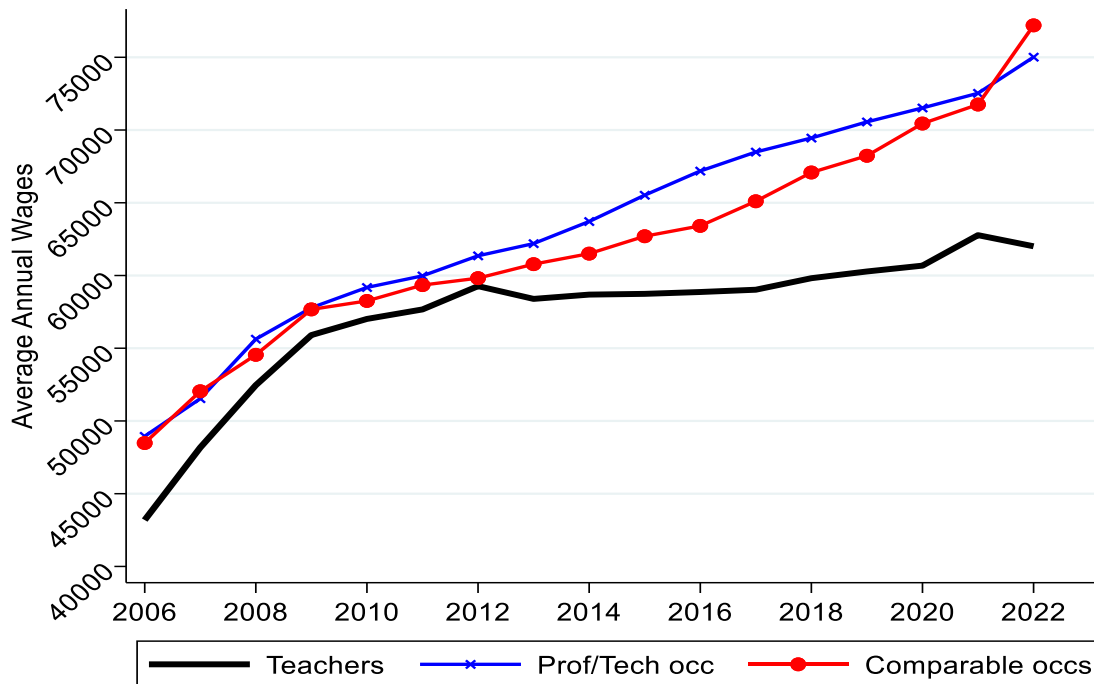
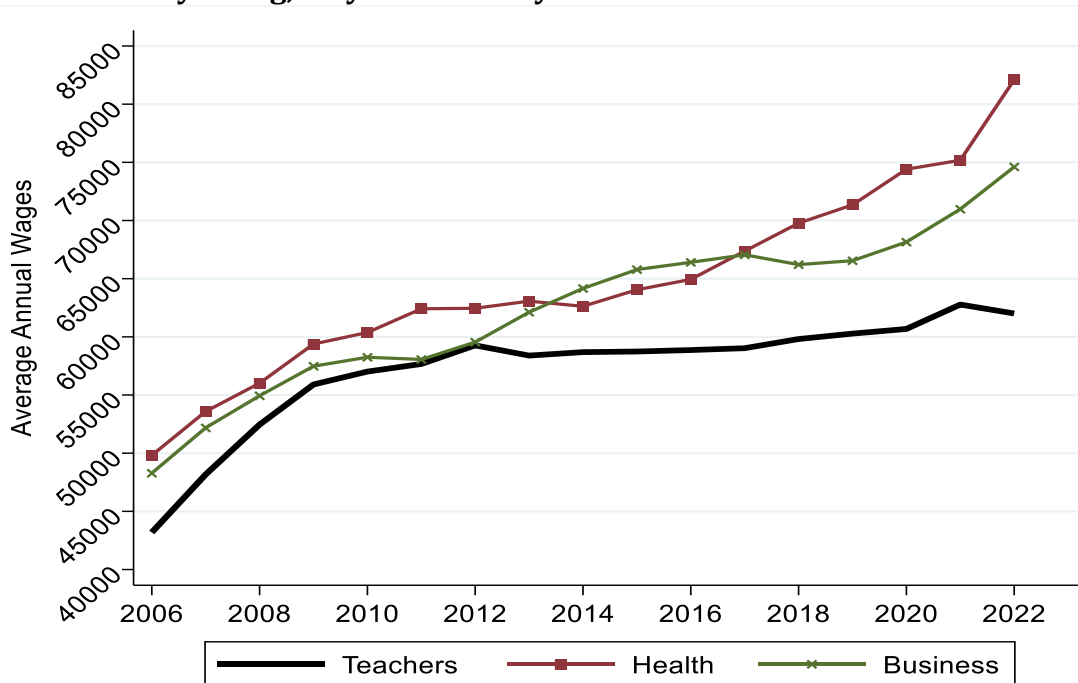


Figure 2.1: Average Annual Wages for Teachers and Comparable Health and Workers in Wyoming, May 2006 to May 2022



Source: U.S. Bureau of Labor Statistics May Quarterly Occupational Employment Statistics. All ownerships across all NAICS.

Figures 3.1 and 3.2 compare the Wyoming ratio of teaching wages to non-teaching wages to the corresponding ratio in other states. Average wages of teachers in Wyoming as of May 2022 were 83 percent of the average wages in other professional and technical occupations, down from a high of about 96 percent in 2011/12. Although lower than in the past, the wage ratio in Wyoming is high relative to other areas. In the U.S. as a whole, teaching wages are about 73 percent of the wages of other professionals. The ratio in neighboring states is about 74 percent. Note that these ratios are based on actual teaching salaries, not model salaries. Since 2018, the ratio of model salaries to the wages of professional and technical workers has been very close to the ratios in other states of actual salaries. In May 2022, the 2021/22 weighted average model teacher salary was 72 percent of the average wages of professional and technical worker wages. (\$54,560/\$75,015).

Figure 3.1: Ratio of Teacher Wages to Wages in Professional/Technical Occupations, Wyoming and Surrounding States, May 2006 to May 2022

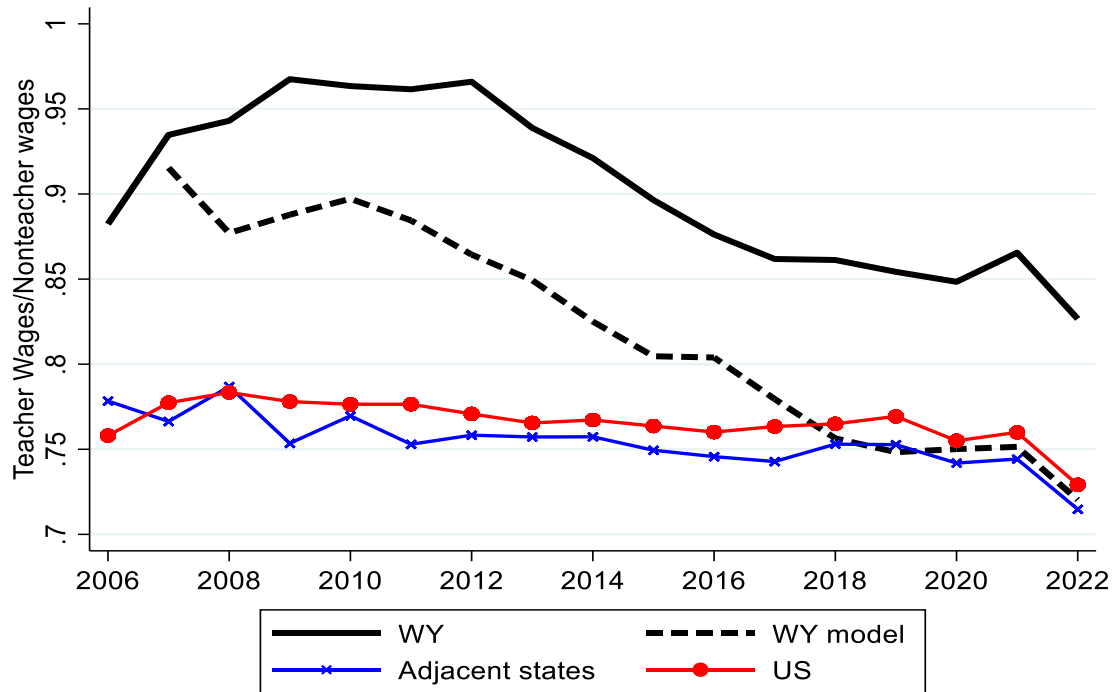
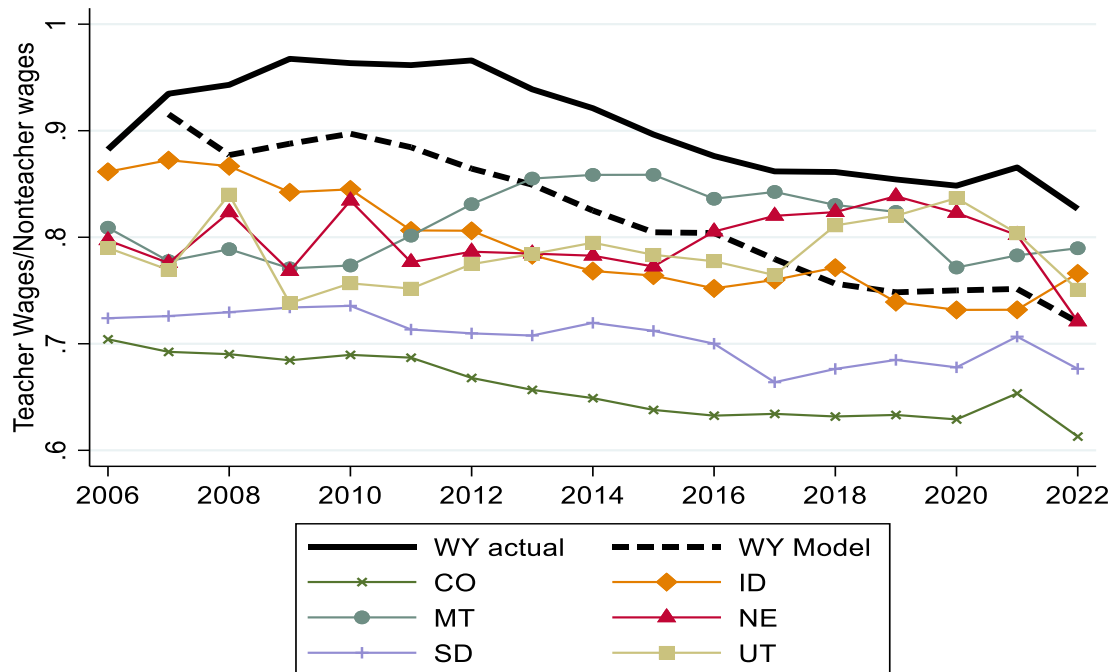


Figure 3.2: Ratio Disaggregated for Surrounding States, May 2006 to May 2022



Source: U.S. Bureau of Labor Statistics May Quarterly Occupational Employment Statistics. All ownerships across all NAICS.

Projecting to 2023

The 2023 OEWS wage data for individual occupations have not been released yet. However, other sources show that the 2021 to 2023 period has been characterized by rapid wage growth. According to the Bureau of Labor Statistics' Quarterly Census of Employment and Wages, average weekly wages in Wyoming for all workers covered by unemployment insurance rose rapidly from March 2021 to March 2022 by 11.2 percent and rose again another 7.8 percent from 2022 to 2023. This is in striking contrast to the previous March 2020 to March 2021 period, when Wyoming's average weekly wages declined slightly.

Note that this wage growth is for all workers. Nationally, there have been particularly sharp increases in wages in retail and service occupations that tend to hire less educated workers. National data indicate that median wages for full time workers with a BA or higher grew by 7.6 percent from 2021 to 2022 and 2.7 percent from 2022 to 2023.

In contrast, the Wyoming Department of Education (Figure 1 above) and the NEA estimates for Wyoming (Figures 4 and 5 below), report that teaching wages from the 2020/2021 to 2022/23 school years grew by about 1 percent a year. This suggests that the previous figures are likely to exhibit another substantial widening between teaching wages and other occupations once all the 2023 data is reported.

Table 2: Percent Changes in Weekly Wages 2021-2023

State percent change in average weekly wage for all workers		
	1 st quarter 2021 to 2022	1 st quarter 2022 to 2023
U.S.	6.70%	6.6%
Wyoming	11.20%	7.8%
Colorado	8.80%	7.1%
Idaho	8.50%	10.1%
Montana	8.30%	9.3%
Nebraska	9.20%	8.0%
North Dakota	6.90%	9.8%
Utah	8.20%	7.9%
National percent change in median usual weekly earnings of full-time wage and salary workers ages 25+, by Education		
	2 nd quarter 2021 to 2022	2 nd quarter 2022 to 2023
BA or higher	7.6%	2.7%
Some college	5.0%	5.1%
HS only	5.7%	6.1%
Less than HS	11.1%	3.5%
All workers	5.6%	4.5%

Source: Average weekly wages from Bureau of Labor Statistics Quarterly Census of Employment and Wages. <https://www.bls.gov/news.release/cewqtr.t03.htm>

Median usual weekly wages of full-time workers from BLS Current Population Survey.

<https://www.bls.gov/charts/usual-weekly-earnings/usual-weekly-earnings-over-time-by-education.htm>

Accounting for Weeks and Hours of Work and Benefits

The fact that teachers do not make 100 percent of the wages of other professional workers is partly related to lower weeks of work. Hours of work per week for teachers and other professionals are similar: according to the American Community Survey (ACS) census data, teachers report working an average of 44 hours per week compared to 45 hours per week for the average non-teacher.

However, teachers typically work fewer weeks. Based on the 185 contract days in Wyoming, teachers work 37 weeks per year. However, this does not include any time spent preparing courses outside of contract days. In the ACS, individuals self-report their weeks of work. Of teachers who report working less than 52 weeks a year, about a third report 40 weeks of work a year. This could reflect very short part-time jobs, but it is also likely that this represents time spent preparing courses. Therefore, it seems like that the average teacher works between 37 and 40 weeks a year at the school job.²

The Bureau of Labor Statistics' National Compensation Survey reports that the average private industry worker receives 15 days of paid vacation per year after 5 years of work and 20 years of paid vacation after 20 years of work.³ This translates into 48 to 49 weeks per year. Consequently, the largest ratio, assuming the highest weeks of work for teachers and the lowest for non-teachers, would be $(40/48 =)$ 83 percent. The smallest ratio, assuming the shortest number of weeks for teachers and the longest for non-teachers, would be 76 percent $(37/49)$. As **Figure 3.1** shows, from 2007 through 2019, the national ratio of teacher pay to the pay on professional workers was about 77 percent, although the last four years have seen a significant erosion in the ratio.

A second difference between teacher and non-teacher compensation is that benefits tend to be higher for teachers. **Table 3** reports hourly compensation for teachers and other workers, including both wages and benefits. This comes from the Bureau of Labor Statistics' National Compensation Survey for March 2023. In the U.S. as a whole, hourly wages for teachers are 95 percent of hourly wages for professionals, and are even closer to the wages of registered nurses. (Teachers and registered nurses were the only two professional occupations to be reported separately in the public use data.) Health and retirement benefits for teachers are somewhat more generous, resulting in ratios of total compensation that are quite close to 1. These data do not have large enough samples for state-level estimates, but they do indicate that national ratios tend to follow the market.

² Author analysis of ACS survey data.

³ <https://www.bls.gov/ebs/notices/2023/paid-sick-leave-paid-vacation-and-consolidated-leave-plan-provisions-in-the-united-states-december-2022.htm>

Table 3: Hourly Wages and Benefits by Occupation, March 2023

	Primary, secondary and special education teachers	Management, professional, and related occupations	Registered nurses
Hourly wages and salaries	\$44.47 per hour	\$46.72 per hour	\$44.55 per hour
Paid leave and supplemental pay	\$3.43	\$8.31	\$9.43
Insurance	\$7.09	\$5.32	\$5.67
Retirement and savings	\$9.57	\$4.11	\$3.30
Legally required benefits	\$3.18	\$4.27	\$4.62
Total compensation	\$67.74	\$68.73	\$67.56

Source: U.S. Bureau of Labor Statistics, "Employer Costs for Employee Compensation-March 2023" (Released June 16, 2023) <https://www.bls.gov/news.release/pdf/ecec.pdf>

Indicator 2: Teaching Salary Trends in Other States

DATA: The OEWS data above reported annual average teacher wages by state based on a random sample of employers. The 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 OEWS estimates. The NCES uses these wage series in reports of teacher salaries.

METRIC: **Figure 4** reports the average teaching wages in Wyoming, in adjacent states and North Dakota, and in the U.S. as a whole for the 2010/11 through 2022/23 school years. **Figure 5** reports this for the individual states in the region.

FINDINGS: **Figures 4** and **5** show that actual average teaching salaries in Wyoming tracked average U.S. teaching wages from 2010 to 2016. Since 2016/17, teaching wages in Wyoming have fallen below the U.S. average. Teaching wages in Wyoming in 2022/23 were 6.6 percent higher than the average for adjacent states and North Dakota falling from the 14.5 percent premium five years prior in 2017/18.

Figure 5 presents the trend in teaching salaries in the individual surrounding states and North Dakota. On average across this group of states, salaries have increased by about 2 percent per year for the last two years. In contrast, actual salaries in Wyoming grew by less than 1 percent.

Average weighted model salaries in 2022/23 were about \$8,000 lower than the U.S. average and \$4,000 less than the average in adjacent states and North Dakota. (Note that these other states do not have centralized funding models like Wyoming's, so there is no "model salary" in comparison states.)

Figure 4: Average Teacher Salaries in WY and Surrounding States + ND, School Years 2010/11 to 2022/23

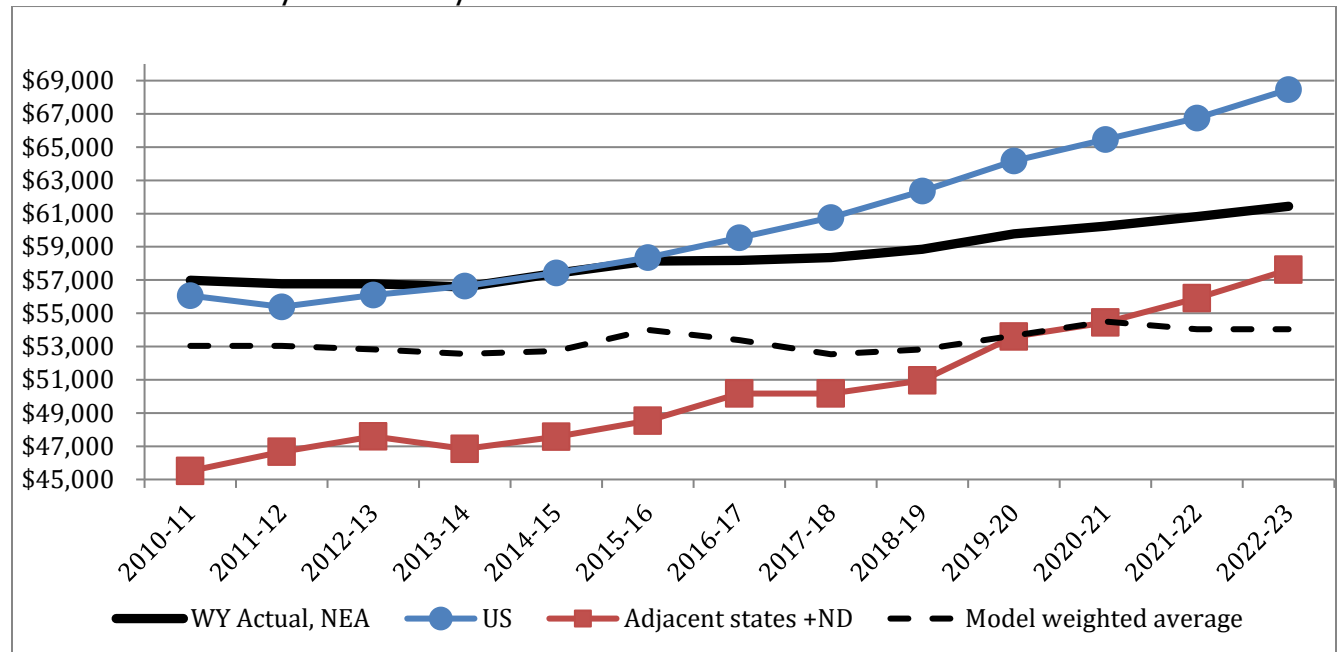
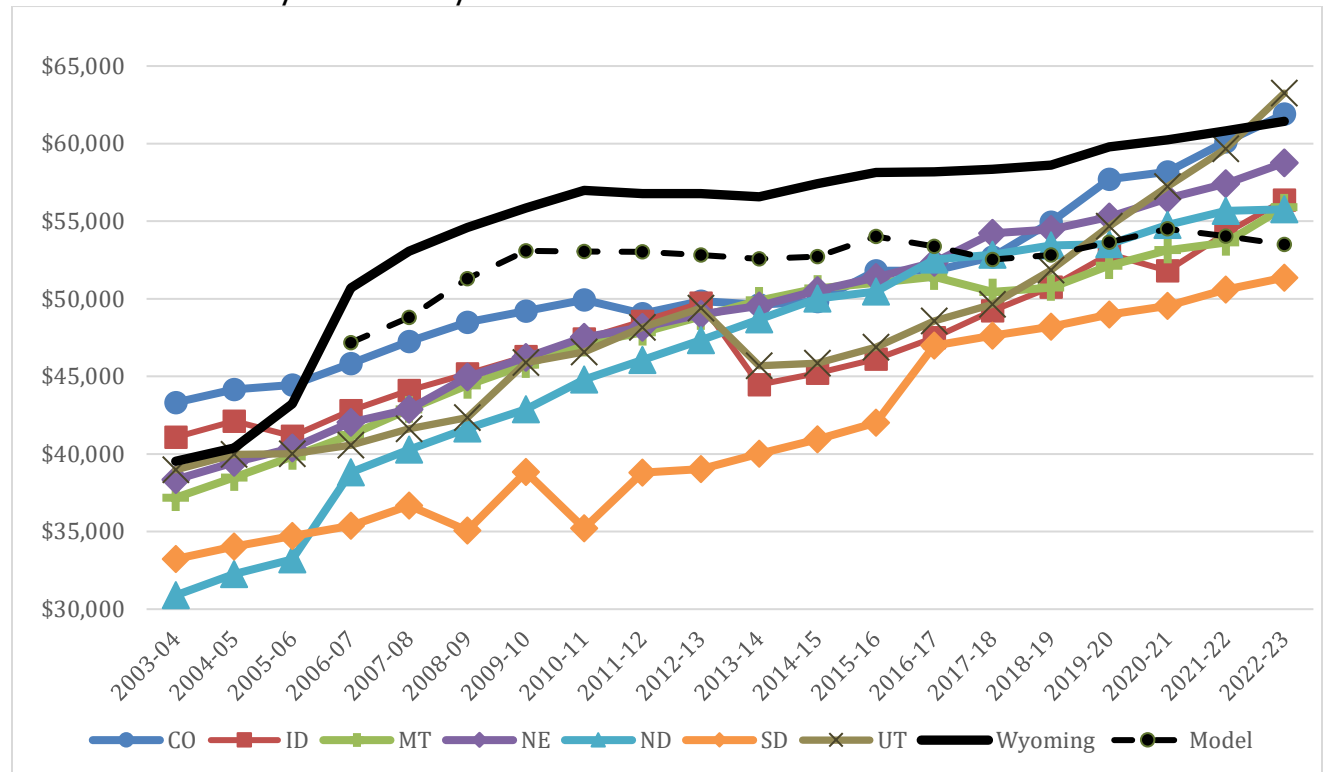


Figure 5: Average Teacher Salaries in Wyoming and Surrounding States + ND, School Years 2010/11 to 2022/23



Source: National Education Association, Estimates of School Statistics, 2023. Model salaries from Wyoming Legislative Service Office. The 2022/23 salary figures are estimates; all other years are actual.

Comparisons of averages mask substantial diversity across districts within states. How do the highest and lowest districts compare? **Table 4** compares the distribution of salaries among districts within each of the states, based on collection of district salaries from individual states. Colorado, Idaho, North Dakota, South Dakota, and Utah all publicly report average district salaries on the state department of education websites for the 2021/22 school year, and Colorado and Idaho also have reported salaries for the 2022/23 school year. **Figure 6** shows the distribution of these district salaries in 2021/22.

Figure 6 and **Table 4** show that lowest paying districts in Wyoming have salaries that are much higher than the lowest paying districts in neighboring states. All districts in Wyoming had salaries in 2021/22 above \$50,000, with the lowest paying district at \$50,112 on average. This salary was about the average salary of 49 percent of the districts in these states. The lowest district *model* salary in Wyoming in 2021-22 was \$47,703, which higher than the actual average salary of 34 percent of districts in these states in the same year.

However, the highest paid districts in other states are more competitive with Wyoming (as of 2021/22). **Table 4** shows that the highest paid district in Colorado (Boulder Valley) pays more than the highest paid district in Wyoming (Teton #1), although this is the only district to exceed Teton #1 salaries. The top 10 and top 25 percent of districts have more similar pay across WY and these states than the lowest paid districts. Only Colorado and Idaho publicly reported 2022/23 district salaries by the time of this report, but the general patterns appear to be similar to 2021/22.

Figure 6: Distribution of District Average Salaries, Wyoming and Selected States

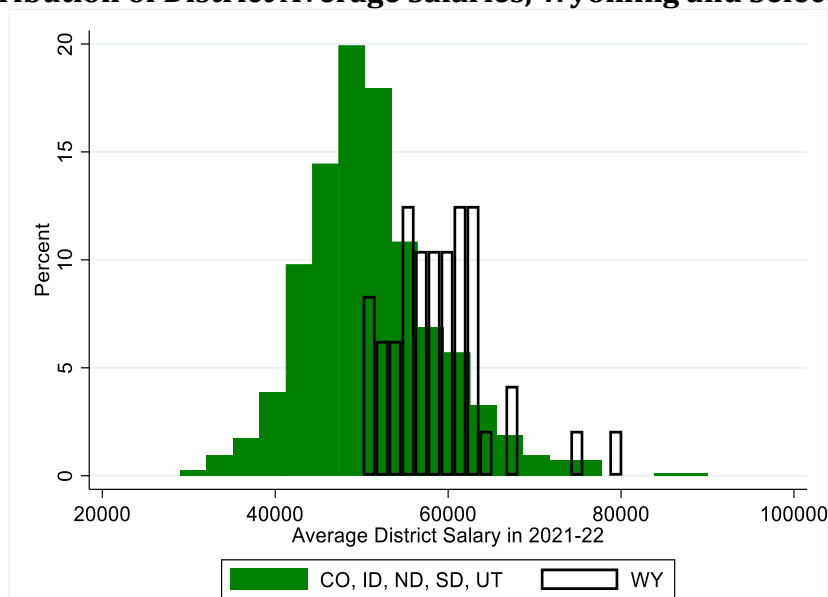


Table 4: Distribution of District Average Teaching Salaries within Neighboring States

	Highest paid district*	Top 10%	Top 25%	Median district	Bottom 25%
2021-22					
WY Actual	\$80,142 (Teton #1)	\$64,966	\$61,668	\$58,617	\$55,418
WY Model	\$81,746 (Teton #1)	\$55,344	\$53,908	\$51,255	\$50,590
CO	\$84,505 (Boulder Valley Re2)	\$62,184	\$52,912	\$45,865	\$41,614
ID	\$74,546 (Blain County)	\$59,616	\$53,251	\$50,398	\$48,219
ND	\$76,906 (Center-Stanton 1)	\$64,626	\$59,000	\$54,685	\$51,403
SD	\$61,437 (Oglala Lakota County SD)	\$52,265	\$49,585	\$47,181	\$45,307
UT	\$71,599 (Salt Lake)	\$62,883	\$56,998	\$52,227	\$47,227
2022-23					
WY Actual	\$84,403 (Teton #1)	\$67,561	\$62,987	\$60,026	\$56,333
WY Model	\$81,761 (Teton #1)	\$54,732	\$54,732	\$50,930	\$50,097
CO	\$87,164 (Boulder Valley Re 2)	\$65,705	\$56,572	\$48,306	\$43,020
ID	\$80,152 (Blain County)	\$62,642	\$56,427	\$51,471	\$49,520

*Traditional districts. Excludes charter schools and schools for special needs students.

Source: Author collection of salary data from individual state reports. Wyoming model and actual average salaries from Wyoming Department of Education and Legislative Service Office.

Indicator 3: Trends in Teacher Recruitment and Training

DATA: Salary comparisons can help to indicate the relative attractiveness of Wyoming in recruiting a high quality teaching workforce. However, to measure whether this translates into actual hires, data on teacher quality is needed. Research has shown that teachers vary widely in their effectiveness in improving student outcomes, both on test scores and in future educational and labor force attainment. In many states, teacher quality indicators have been developed to measure the effectiveness of individual teachers. At present, Wyoming does not link student outcomes with individual teachers, making it difficult to evaluate whether higher salaries in Wyoming are bringing in more effective teachers.

In the Wyoming Department of Education's fall staffing files, school districts report the education and training of teachers. Currently, this is one of the only ways to track how the qualifications of new hires compare with those in the past. Previous research has indicated that better student outcomes are correlated with teachers who trained at more selective institutions with better student outcomes.⁴ There are particular concerns about the quality of teacher training at for-profit or online universities.⁵ While advanced degrees have not generally been found to necessarily be related to student achievement,⁶ the percent of new hires with masters' degrees may proxy for the ability of Wyoming to recruit higher quality teachers.

METRIC: **Table 5** reports the states where new hires obtained their first BA degree and the institutions where teachers obtained their first degree. **Table 6** reports the fraction of new hires with at least a master's degree.

FINDINGS: **Table 5** indicates that the percentage of teachers being recruited from within Wyoming ranged from 42 to 49 percent during the 2015-2022 period. The bottom panel of **Table 5** reports the original state and institution where recent hires earned their first bachelor's degree. This is reported for hires that earned their first bachelor's degree within 5 years of being hired. Between 2018 and 2022, about 80 percent of new hires with a recent bachelor's degree came from six universities: University of Wyoming, Western Governor's University, Black Hills State University, Valley City State University, Chadron State University, and Grand Canyon University.

⁴ For example, see Ballou (1996), Clotfelter, Vigdor and Ladd (2006), Ehrenberg and Brewer (1994), Ferguson and Ladd (1996).

⁵ See Fox Garrity (2013) and Lincove, Osborne, Mills and Bellows (2015) for a discussion of the effectiveness of for-profit and online teacher training programs.

⁶ Rivkin, Hanushek, and Kain (2005) review some of the evidence on master's degrees.

Table 5: Fraction of Wyoming New Hires, by State of First Bachelor's Degree

Year	From Wyoming	From Adjacent states	Other States
2015	43%	42%	15%
2016	44	40	16
2017	47	40	13
2018	45	40	15
2019	42	43	14
2020	49	39	12
2021	48	37	15
2022	44	41	15
Teachers with BA degree earned in last 5 years hired 2018-2022 (N=2,027)			
Bachelor's Degree Institution		Percent of 2018-2022 Hires from each institution	
University of Wyoming		45%	
Western Governor's University		12	
Black Hills State University		5	
Valley City State University		5	
Chadron State		4	
Grand Canyon University		2	
1-2% each from Brigham Young University Idaho, University of Northern Colorado, Utah State University			
Other Universities: 22%			

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

An advanced degree is another measure of the education background of newly hired Wyoming teachers. **Table 5** shows that about a third of new hires have a master's degree.

Table 6: Fraction of Wyoming New Hires with Master's Degrees

Year Hired	Percent with MA
2015	37.90%
2016	40.00%
2017	33.70%
2018	34.40%
2019	38.80%
2020	37.30%
2021	32.30%
2022	36.80%

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

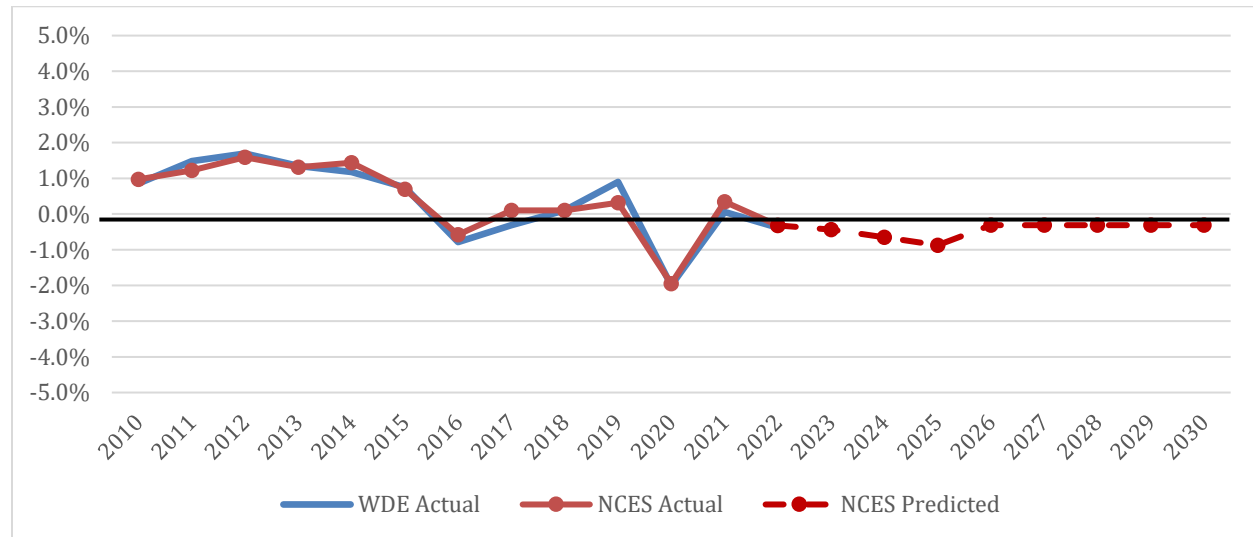
Indicator 4: Trend in Student Enrollment

DATA: The Wyoming Department of Education reports actual fall enrollment each year. The NCES also releases counts based on a slightly different methodology and produces projections of student enrollment through 2030.⁷ These should be interpreted with some caution as all projections are subject to error: a significant change in migration patterns across states, for example, would change these estimates.

METRIC: Stress on salary is generated through a combination of how many people are interested in teaching and how many districts need to hire. One source of new positions is rising student enrollment. One source of fewer positions is decreasing student enrollment.

FINDINGS: **Figure 7** shows the past trends and future projections for student enrollment. Based on NCES projections, student enrollment is predicted to decline slightly over the next 2 years and then decline slightly to 2030.

Figure 7: Trend in Student Enrollment Growth Rate in Wyoming, Actual and Predicted 2010-2030



Source: National Center for Education Statistics, Digest of Education Statistics.

⁷ The Wyoming School Facilities Division also projects student enrollment, but does not adjust for the age profile of the state. The NCES projections incorporate the age structure of the Wyoming population.

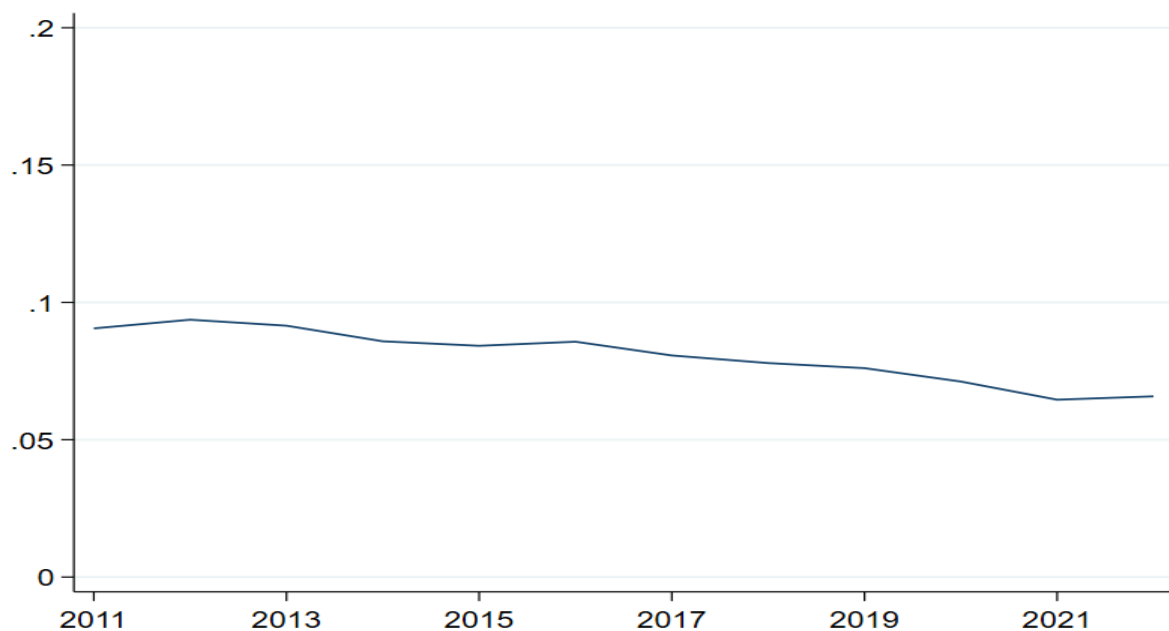
Indicator 5: Trend in Teacher Retirements

DATA: The Wyoming Department of Education Staffing Files (WDE 602) include the age of teachers. By merging these staffing files across years, the data indicate when a teacher of retirement age left teaching.

METRICS: **Figure 8** shows fraction of teachers ages 60 and older for 2011/12 through 2022/23

FINDINGS: **Figure 8** shows that the percentage of teachers ages 60 and older has been steadily declining. Currently, about 7 percent of teachers are 60 or older. Because of this decline, retirement pressures for the future are expected to be similar to (or slightly lower than) those of the past 5 years. The age profile of teachers has shifted towards younger replacements, reducing replacement pressures due to retirements.

Figure 7: Fraction of Wyoming Teachers of Age 60+, Fall 2011 – Fall 2022



Source: Wyoming Department of Education Staffing files (WDE 602).

Indicator 6: Percent of New Hires

DATA: Wyoming Department of Education Staffing Files (WDE 602).

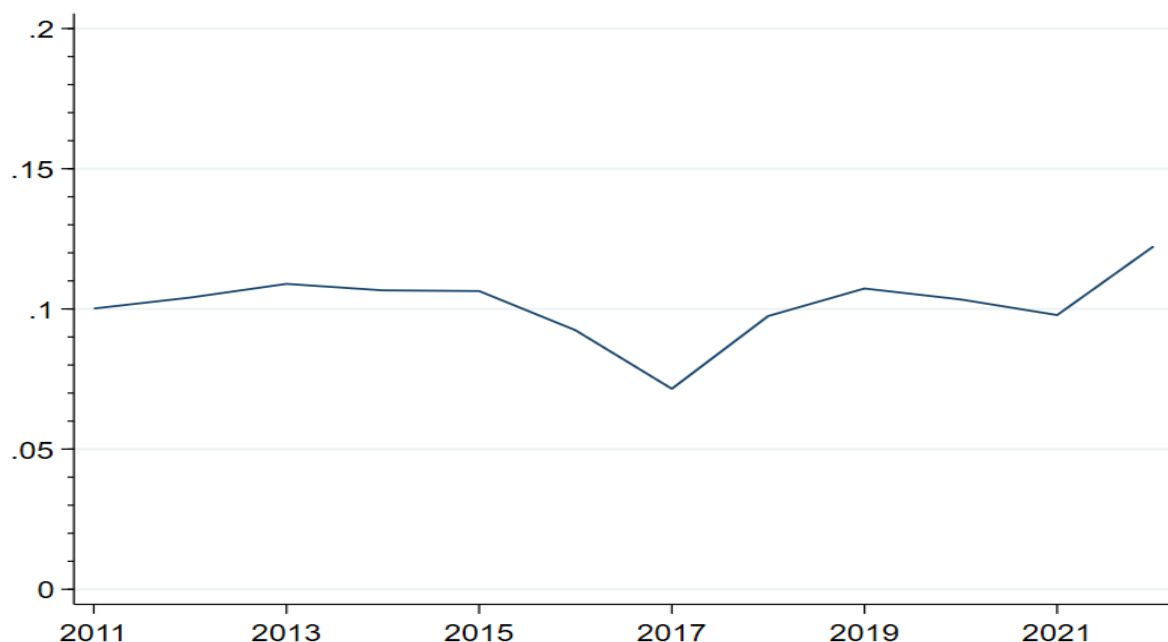
METRIC: The net combination of student enrollment, teacher retirements, and teacher exits for other reasons results in the percentage of new hires. Policy changes, like class size reductions, would also influence this percentage. An abrupt increase in the percent of new hires may therefore warrant more monitoring of salaries to ensure that salaries are sufficient to recruit these additional teachers.

New hires in this report are defined as teachers in Wyoming who were not working as a teacher in the previous year. Transfers from one district to another are not counted as new hires. Teachers who left employment for at least a year and then later returned to employment are included in new hires. This is because teachers who were rehired after a year or more of leave would be filling a vacant position.

Figure 9 reports the past pattern of new hires.

FINDINGS: The fraction of teachers who are a new hire ranged between 9 and 11 percent since 2011. The current rate of 12.2 percent is slightly higher than in recent years.

Figure 9: Percent of Wyoming Teachers who are New Hires, Fall 2011-2022



Source: Wyoming Department of Education Staffing files (WDE 602) Years 2011/12 - 2022/23

Indicator 7: Retention Rates of Current Teachers

DATA: Wyoming Department of Education Staffing Files (WDE 602).

METRIC: Some turnover is inevitable, and even desirable, as it takes some experience in the classroom to determine if teaching is a good fit, and retaining less effective teachers is not an optimal outcome. Nevertheless, a sizable increase in turnover rates could indicate changing labor market conditions for teachers.

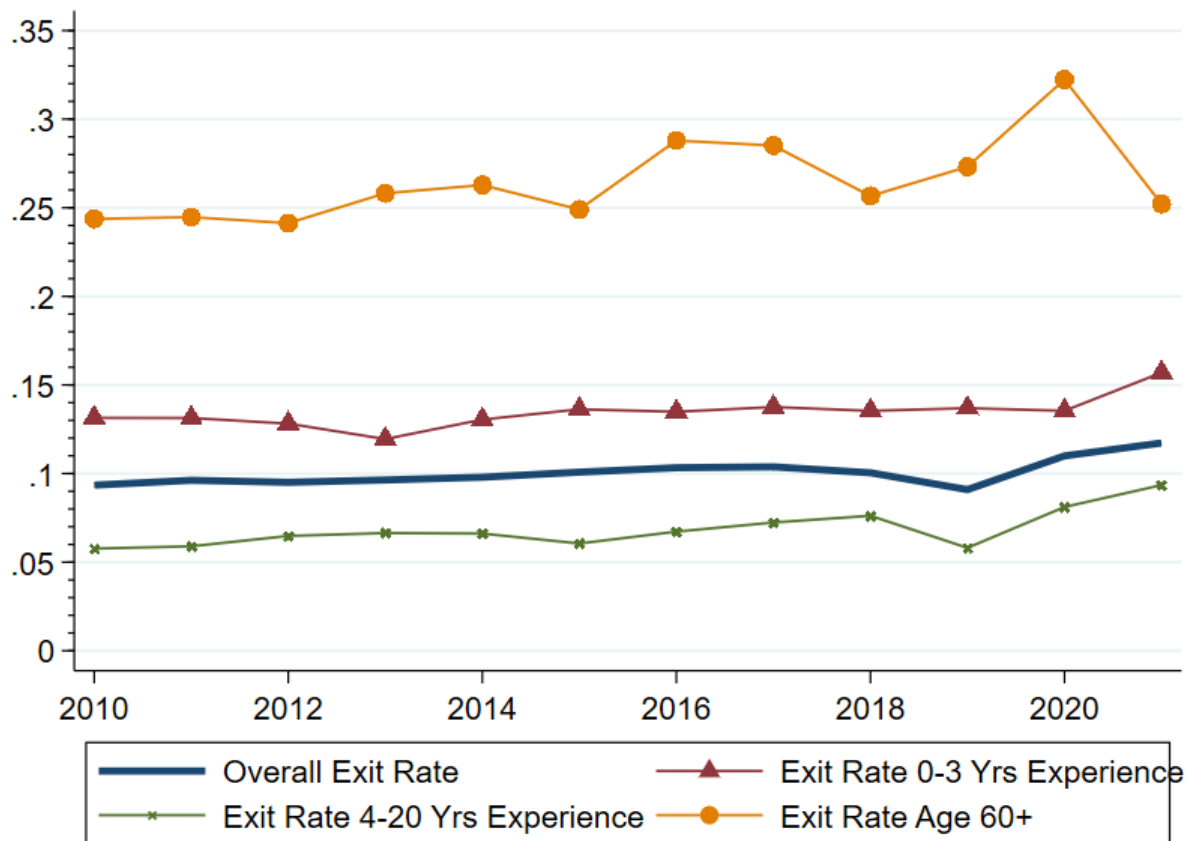
Exits in this report are defined as teachers in Wyoming who were not working as a teacher in the subsequent year. Transfers from one district to another are not counted as exits. Teachers who left employment for at least a year and then later returned to employment would be counted as an exit in the year they first left. This definition is used because an exit of a year or more leads to a position that districts need to fill.

Some individuals have more than one occupational assignment. Following OEWS guidelines, this analysis only includes individuals where teaching was the occupation that required the highest level of skill. For example, if an individual was a teacher and an assistant principal, he or she would be coded as an assistant principal. An individual whose assignment changed to include an administrative component would therefore be counted as an “exit.”

FINDINGS: Figure 10 shows that exit rates were relatively steady about 10 percent, from 2010/11 to 2019/20. Since then, exit rates for teachers before retirement age have risen to above any previously recorded levels. Of those teaching in 2021/22, 11.7 percent did not return in 2022/23 school year. More strikingly, the exit rate for new teachers (less than 3 years of experience) is 15.7 percent, a 2-percentage point jump from the previous year and the highest rate recorded in these data. Exit rates for mid-career teachers were also up, to 9.3 percent (compared to the 10-year average of 7.1 percent). The exit rates for the last two years for mid-career teachers were both higher than in any other years recoded.

Between the 2020/21 and 2021/22 school years, a slightly higher percentage of teachers ages 60 and older exited than was typical, followed by a lower rate in from 2021/22 to 2022/23. This seems to indicate that some teachers shifted their retirement date following the pandemic, but that this has not gone back to normal rates.

Figure 10: Percent of Wyoming Teachers Exiting the Profession, 2010/11 – 2021/22



Source: Wyoming Department of Education Staffing Files (WDE 602).

One concern around the country is whether exits are leading to teacher shortages. According to one recent study, Wyoming is one of 13 states with no data on teacher vacancies, making it difficult to assess the extent of shortages or to compare Wyoming to other states (Nguyen et al 2022). The companion report to last year's monitoring report, "An Overview of State Policies to Improve Teacher Recruitment and Retention" (Stoddard 2022), provides some information about state data reporting options to provide more information on shortages.

The Pipeline for Future Teachers

DATA: University of Wyoming reports the number of individuals majoring in education and awarded a BA in education in each year. All states now report both traditional and alternative teacher certification programs for Title II of the Federal Higher Education Act. These are reported to the U.S. Department of Education. States report the number of individuals enrolled in teacher preparation programs, the number of completers, the number of individuals taking teacher certification exams, and the number passing the exams. These are reported in October for the previous year.

METRIC: An increasing national conversation concerns the “pipeline” for future teachers.

In Wyoming, the only teacher preparation program is the traditional coursework-based program at the University of Wyoming. Some other states also have alternative programs for teacher certification, some of which are sponsored by institutes of higher education (IHE) and some which are not. For example, the University of Northern Colorado has both a traditional and an alternative teacher preparation program. Boulder Journey School only offers an alternative teacher preparation program. This is a residency-based program for individuals who work in Colorado schools for a year under a mentor teacher, and are then awarded Master’s degrees through the University of Colorado and a teaching license after passing the licensure exam.

Note that this is not the only *pathway* to certification in Wyoming. However, the University of Wyoming is the only reported teacher preparation *program*. The comparisons below from the Title II data are only for program completers.

FINDINGS:

Table 7 and the accompanying **Figures 11A and 11B** show that the number students with education degrees or majoring in education from the University of Wyoming fell between 2010 and 2016, but has stabilized since then. In 2023, 182 students (8.6 percent of all degrees) were awarded BA degrees in education about the same as in 2021.

Figure 11A: University of Wyoming Bachelor's Degrees Awarded in All Education Related Majors

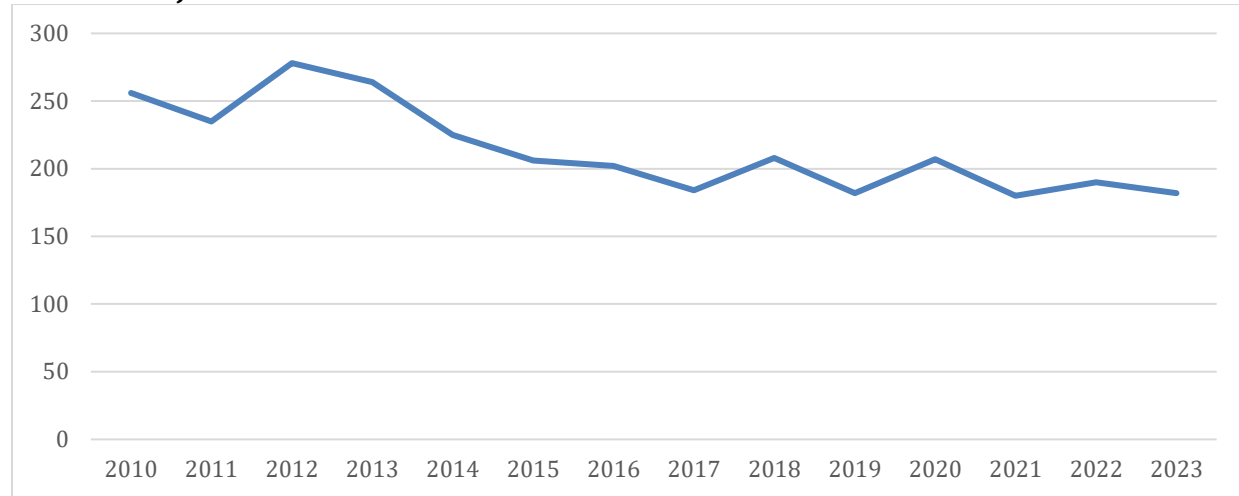
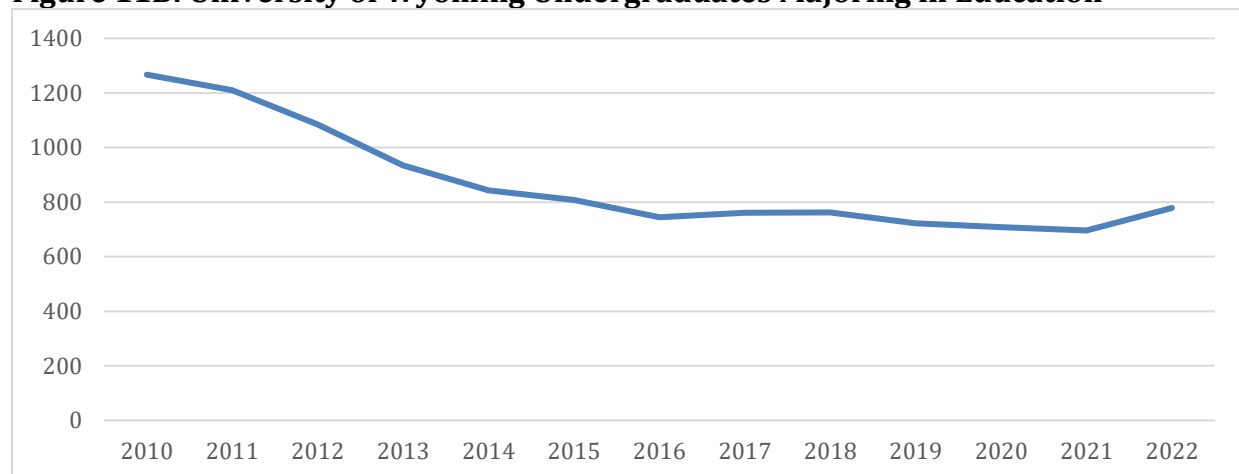


Figure 11B: University of Wyoming Undergraduates Majoring in Education



Source: University of Wyoming Banner Information System. Degrees and majors in education include a CIP code of 13.

Table 7: Bachelor's Degree graduates from the University of Wyoming

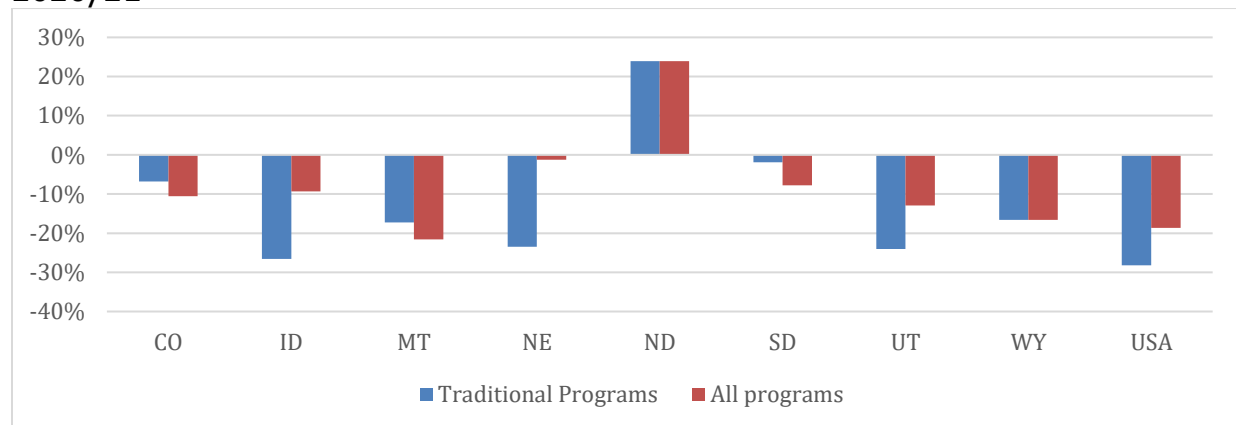
Year	Education BA Degrees Awarded	All UW BA Degrees	Ed as Percent of Degrees
2010	256	1,783	14.4%
2011	235	1,853	12.7%
2012	278	2,062	13.5%
2013	264	2,053	12.9%
2014	225	2,007	11.2%
2015	206	2,022	10.2%
2016	202	2,159	9.4%
2017	184	2,204	8.3%
2018	208	2,127	9.8%
2019	182	2,228	8.2%
2020	207	2,295	9.0%
2021	180	2,205	8.2%
2022	190	2,121	9.0%
2023	182	2,111	8.6%

Source: University of Wyoming Banner Information System. Degrees in education include a CIP code of 13. Note that 2023 figures are preliminary and will be confirmed Oct 1, 2023

Teaching degrees do not translate perfectly into new teachers. In many states, there are alternative pathways to become a teacher other than through a typical university education. Furthermore, potential teachers must pass certification exams, and not all college graduates take and pass these tests.

How does Wyoming compare with other states in terms of the pipeline for future teachers? **Figure 12** shows that most states have seen significant declines in the number of traditional teacher preparation program completers since 2011, as indicated by the blue bars. Wyoming's decline of about 15 percent is smaller than the national average of about 25 percent. Colorado had a smaller decline than Wyoming, and North Dakota had an increase, and it is worth noting that these two states are the two highest paid comparisons states (as shown in **Table 3**). Furthermore, Wyoming does not have an alternative certification path. When alternative completers are included, the decline in Wyoming is greater than in all surrounding states except Montana.

Figure 12 Change in completers of teaching preparation programs, 2011/12–2020/21



Source: US Department of Education. <https://title2.ed.gov/Public/Home.aspx>. Accessed 8/28/2023

Not only has Wyoming experienced a larger decline in the numbers of teaching preparation candidates, but the rate of certification exam takers and exam pass rates are low in Wyoming. Completers of teacher preparation programs do not always become certified. Certification requires passing an exam, usually the PRAXIS exam. Completers from programs located in the state as well as individuals from other states can sit for the certification exam. Title II data report the number of individuals who sit for the exam and the number who pass. These data have only been reported since 2014/15.

Wyoming has the lowest ratio of individuals who sit for the exam relative to the number of completers compared to all surrounding states. Wyoming also has one of the lowest pass rates, similar to the rate in North Dakota, but lower than other states. These findings are shown in **Figure 13** below. Part of this discrepancy in the fraction who take and pass the Praxis exam in Wyoming may have to do with certification requirements in the state. Only elementary school teachers and Social Studies Composition are required to pass the Praxis II licensing exam in Wyoming.

Figure 13A: Exam takers relative to program completers

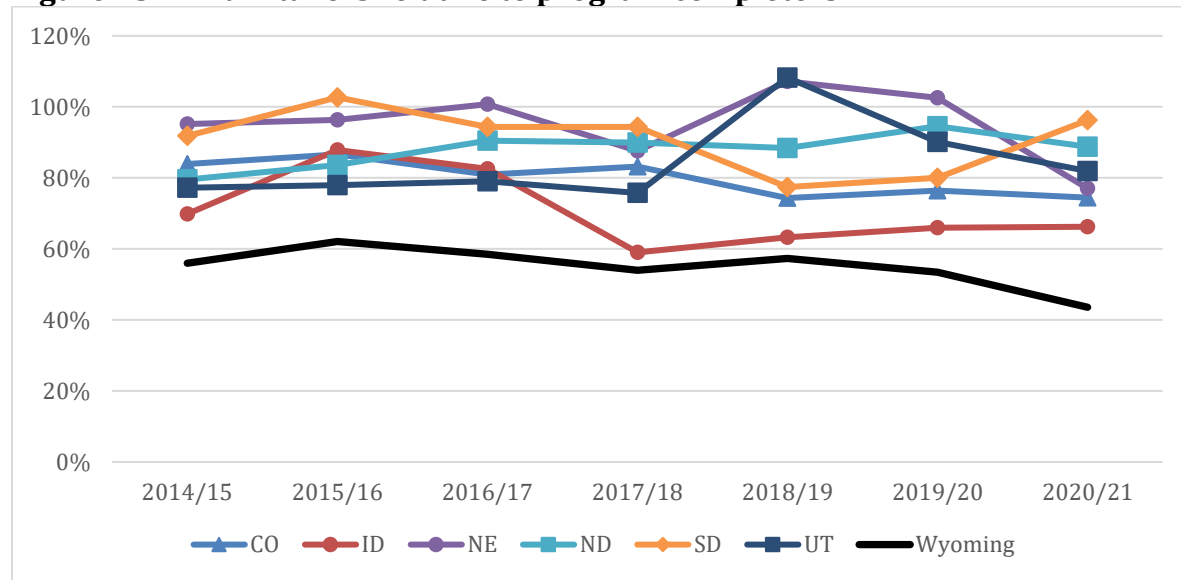


Figure 13B: Teacher certification exam pass rates

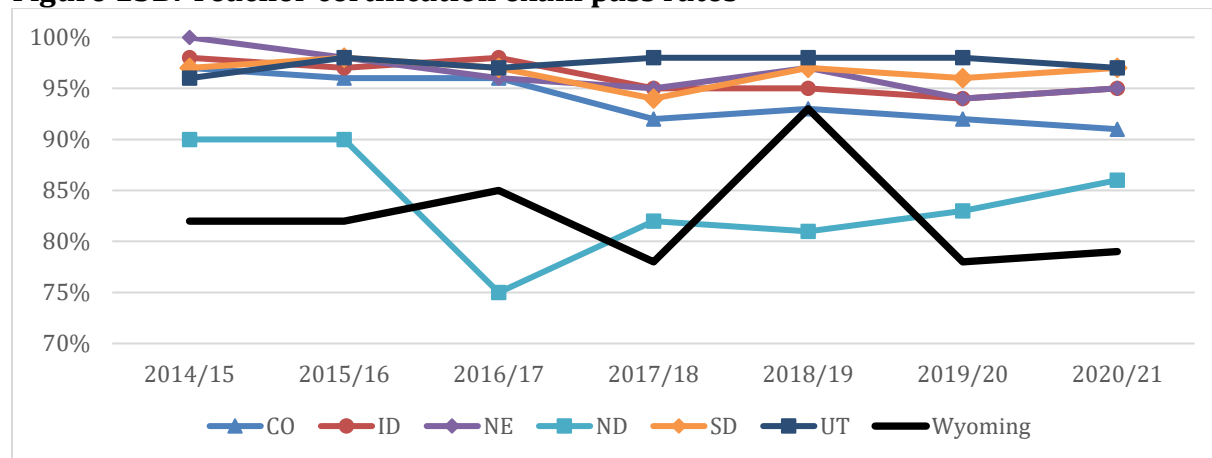
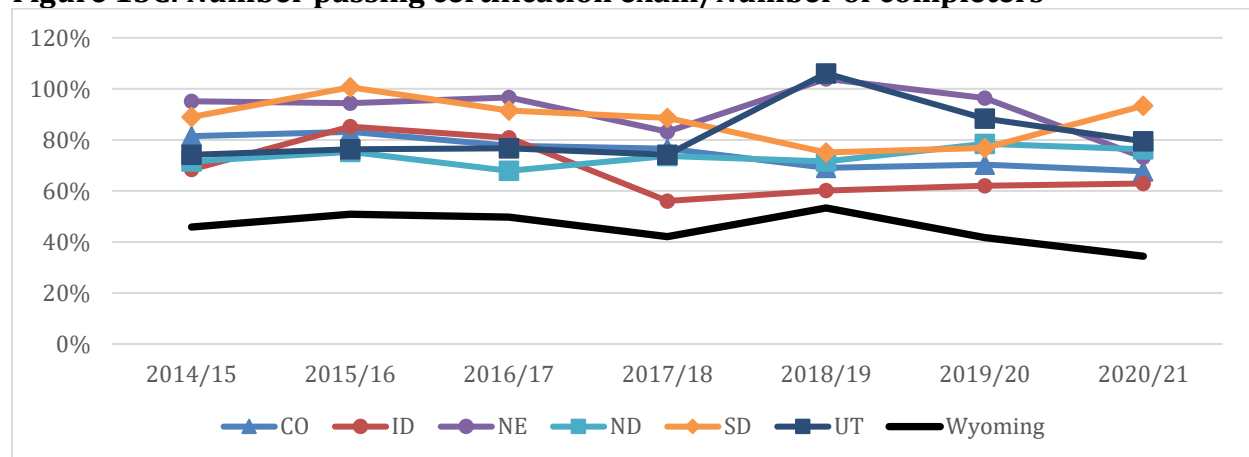


Figure 13C: Number passing certification exam/Number of completers



Source: US Department of Education. <https://title2.ed.gov/Public/Home.aspx>. Accessed 8/28/23. Montana did not report exam data.

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Appendix A: 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 (11-0000)
- Business and Financial Operations Occupations (13-0000)
- Computer and Mathematical Occupations (15-0000)
- Architecture and Engineering Occupations (17-0000)
- Life, Physical, and Social Science Occupations (19-0000)
- Community and Social Services Occupations (21-0000)
- Legal Occupations (23-0000)
- Educational, Instruction and Library Occupations (25-0000) excluding elementary, secondary, and special education teachers (25-2012 through 25-2054)
- Arts, Design, Entertainment, Sports, and Media Occupations (27-0000)
- Healthcare Practitioners and Technical Occupations (29-0000)

The Economic Policy Institute (EPI) identified professional and managerial occupations that it determined to be similar to teaching based on Bureau of Labor Statistics skill ratings. These occupations are:

- Accountants and auditors
- Underwriters
- Personnel training and labor relations specialists
- Inspectors and compliance officers, except construction
- Architects
- Forestry scientists
- Conservation scientists
- Registered nurses
- Occupational therapists
- Physical therapists
- Educational, Guidance, and Career Counselors and Advisors
- Archivists and curators
- Clergy
- Technical writers
- Editors and reporters, news analysts, journalists
- Computer programmers

Appendix B: Data Used in Select Figures

Figure 1: Actual Average Annual Wages and Weighted Teacher Model Salaries in Wyoming, 2010/11 to 2022/23

School Year	Actual Average Salary	Model Weighted Average	Percent Difference
2010/11	\$56,105	\$53,046	5.8%
2011/12	\$56,775	\$53,036	7.0%
2012/13	\$56,775	\$52,824	7.5%
2013/14	\$56,583	\$52,567	7.6%
2014/15	\$57,414	\$52,724	8.9%
2015/16	\$58,140	\$54,010	7.6%
2016/17	\$58,187	\$53,387	9.0%
2017/18	\$58,352	\$52,535	11.1%
2018/19	\$58,861	\$52,819	11.4%
2019/20	\$59,876	\$53,648	11.6%
2020/21	\$60,234	\$54,503	10.5%
2021/22	\$60,819	\$54,036	12.6%
2022/23	\$61,962	\$53,506	15.8%
2023/24	--	\$55,763	

Source: Wyoming Department of Education staffing files. Model salaries from Wyoming Legislative Service Office. Teachers in calculated actual average include only those with regular K-12 classroom assignments. Salaries include only regular salary.

Figure 2: Average Annual Wages for Teachers and Comparable Workers in Wyoming, May 2011 to May 2022

School Year	Teachers	Comparable Occupations		Professional and Technical Workers	
	Average Wage	Average Wage	Ratio Teaching/Comparable	Average Wage	Ratio Teaching/Prof & Tech
2010/11	\$57,669	\$59,340	97.2%	\$59,976	96.2%
2011/12	\$59,268	\$59,819	99.1%	\$61,355	96.6%
2012/13	\$58,390	\$60,779	96.1%	\$62,194	93.9%
2013/14	\$58,687	\$61,504	95.4%	\$63,713	92.1%
2014/15	\$58,739	\$62,699	93.7%	\$65,523	89.6%
2015/16	\$58,867	\$63,412	92.8%	\$67,182	87.6%
2016/17	\$59,023	\$65,103	90.7%	\$68,488	86.2%
2017/18	\$59,814	\$67,080	89.2%	\$69,452	86.1%
2018/19	\$60,277	\$68,230	88.3%	\$70,561	85.4%
2019/20	\$60,668	\$70,447	86.1%	\$71,519	84.8%
2020/21	\$62,774	\$71,753	87.5%	\$72,528	86.6%
2021/22	\$62,009	\$77,196	80.3%	\$75,015	82.7%
Average	\$59,683	\$65,614	91.4%	\$67,292	89.0%

Source: Bureau of Labor Statistics May Quarterly Occupational Employment Statistics. All ownerships across all NAICS.

Figure 3: Ratio of Teacher Wages to Wages in Professional/Technical Occupations, Wyoming and Other States, May 2011 to May 2022

School Year	Ratio in Wyoming	Ratio in Surrounding States	Ratio in United States
2010/11	96.2%	75.3%	77.6%
2011/12	96.6%	75.8%	77.1%
2012/13	93.9%	75.7%	76.5%
2013/14	92.1%	75.7%	76.7%
2014/15	89.6%	74.9%	76.4%
2015/16	87.6%	74.6%	76.0%
2016/17	86.2%	74.3%	76.3%
2017/18	86.1%	75.3%	76.5%
2018/19	85.4%	75.3%	76.9%
2019/20	84.8%	74.2%	75.5%
2020/21	86.6%	74.4%	76.0%
2021/22	82.7%	71.5%	72.9%
Average	89.0%	74.8%	76.2%

Source: Bureau of Labor Statistics May Quarterly Occupational Employment Statistics. All ownerships across all NAICS.

Figures 4 and 5: Average Teacher Salaries in WY and Surrounding States Plus ND, 2010/11 to 2022/23

Year	WY	US	CO	ID	MT	NE	ND	SD	UT
2010/11	\$56,978	\$56,069	\$49,938	\$47,416	\$47,132	\$47,521	\$44,807	\$35,201	\$46,571
2011/12	\$56,774	\$55,389	\$49,049	\$48,551	\$47,839	\$48,154	\$46,058	\$38,804	\$48,159
2012/13	\$56,775	\$56,103	\$49,844	\$49,734	\$48,855	\$48,997	\$47,344	\$39,018	\$49,393
2013/14	\$56,583	\$56,648	\$49,615	\$44,465	\$49,893	\$49,539	\$48,666	\$48,666	\$45,695
2014/15	\$57,414	\$57,420	\$49,828	\$45,218	\$50,670	\$50,525	\$50,025	\$50,025	\$45,848
2015/16	\$58,140	\$58,353	\$51,233	\$46,122	\$51,034	\$51,386	\$51,223	\$42,025	\$46,887
2016/17	\$58,187	\$59,660	\$51,808	\$47,504	\$51,422	\$52,338	\$52,968	\$46,979	\$48,576
2017/18	\$58,352	\$60,477	\$52,701	\$49,225	\$50,449	\$54,213	\$52,850	\$47,631	\$49,655
2018/19	\$58,861	\$62,355	\$54,935	\$50,757	\$50,721	\$54,470	\$53,434	\$48,204	\$51,858
2019/20	\$59,786	\$64,133	\$57,706	\$52,875	\$52,135	\$55,267	\$53,525	\$48,984	\$54,678
2020/21	\$60,234	\$ 65,456	\$58,183	\$51,817	\$53,133	\$56,463	\$54,755	\$49,547	\$57,226
2021/22	\$60,819	\$66,745	\$60,130	\$54,232	\$53,628	\$57,420	\$55,666	\$5,0592	\$59,671
2022/23	\$61,437	\$68,469	\$61,907	\$56,365	\$55,909	\$58,763	\$55,767	\$51,363	\$63,257

Source: National Education Association, Estimates of School Statistics, 1959-60 through 2022-23. The 2022/23 figures are estimates.

Figure 7: Trend in Student Enrollment in Wyoming, 2000-2031

Fall	Enrollment	Growth Rate	Projection Status
2000	89,531		Actual Growth
2001	87,897	-1.8%	Actual
2002	86,117	-2.0%	Actual
2003	84,741	-1.6%	Actual
2004	83,772	-1.1%	Actual
2005	83,705	-0.1%	Actual
2006	84,629	1.1%	Actual
2007	85,578	1.1%	Actual
2008	86,519	1.1%	Actual
2009	87,420	1.0%	Actual
2010	88,165	0.9%	Actual
2011	89,476	1.5%	Actual
2012	90,993	1.7%	Actual
2013	92,218	1.3%	Actual
2014	93,303	1.2%	Actual
2015	94,002	0.7%	Actual
2016	93,261	-0.8%	Actual
2017	92,976	-0.3%	Actual
2018	93,029	0.1%	Actual
2019	93,832	0.9%	Actual
2020	91,938	-2.0%	Actual
2021	91,992	0.1%	Actual
2022	91,640	-0.4%	Actual
2023-2031		-0.3%	Projected Annual Change

Source: Wyoming Department of Education Actual Enrollment for Fall 1990-2022. Projected Enrollment 2023-2031 from National Center for Education Statistics, Digest of Education Statistics.

Figure 8: Fraction of WY Teachers of Age 60+, 2011/12 to 2022/23

Year	Percent of Teachers 60+	Exit rate of Teachers 60+
2012/13	9.4%	24.1%
2013/14	9.2%	25.8%
2014/15	8.6%	26.3%
2015/16	8.5%	24.9%
2016/17	8.6%	28.8%
2017/18	8.2%	28.5%
2018/19	7.9%	25.6%
2019/20	7.6%	27.3%
2020/21	7.1%	32.2%
2021/22	6.5%	25.2%
2022/23	6.6%	--
Period Average	8.25%	26.9%

Source: Wyoming Department of Education Staffing files (WDE 602)

Figure 9: Percent of Wyoming Teachers who are New Hires, Fall 2013-2022

Year	Hire Rate
2013/14	10.7%
2014/15	10.6%
2015/16	10.5%
2016/17	9.2%
2017/18	7.1%
2018/19	9.7%
2019/20	10.7%
2020/21	10.3%
2021/22	9.8%
2022/23	12.2%
10 year Average	10.1%

Source: Wyoming Department of Education Staffing files (WDE 602)

Figure 10: Percent of Wyoming Teacher Exiting the Profession After School Year, 2012/13 – 2021/22

Year	All teachers	Less than 3 Years Experience	Midcareer (4-20 years exp.)
2012/13	9.5%	12.8%	6.5%
2013/14	9.6%	11.9%	6.6%
2014/15	9.8%	13.0%	6.6%
2015/16	10.1%	13.6%	6.1%
2016/17	10.3%	13.5%	6.7%
2017/18	10.4%	13.8%	7.2%
2018/19	10.0%	13.5%	7.6%
2019/20	9.1%	13.7%	6%
2020/21	11.0%	13.5%	8.1%
2021/22	11.7%	15.7%	9.3%
10 Year Average	10.2%	13.5%	7.1%

Source: Wyoming Department of Education Staffing files (WDE 602)