

RESEARCH

Teacher Salaries and Graduation Rates: Correlations Across U.S. States and Demographics

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Abstract

This study examines the association between average teacher salaries and high school graduation rates across U.S. states during the 2018–19 academic year, with a focus on both racial/ethnic groups and vulnerable student populations. State-level graduation outcomes were analyzed for White, Asian, Black, Hispanic, and American Indian/Alaska Native students, as well as for economically disadvantaged students, students with disabilities, homeless students, foster care students, and students with limited English proficiency. Using Pearson correlation coefficients, the study assessed whether higher teacher salaries were consistently linked to improved graduation rates across these diverse groups. Findings indicate moderate positive correlations for Asian, Black, and Hispanic students, suggesting that higher teacher pay may support stronger graduation outcomes for these populations. In contrast, weak or negligible correlations were observed for White and American Indian/Alaska Native students, and negative or near-zero correlations emerged for economically disadvantaged students, students with disabilities, homeless students, and foster care students. These results suggest that while competitive teacher compensation may contribute to improved outcomes for some student groups, salary increases alone are insufficient to address longstanding disparities affecting vulnerable populations. A more comprehensive policy approach—pairing competitive compensation with targeted academic, social-emotional, and wraparound supports—may be necessary to promote equitable graduation outcomes across states.

Keywords: teacher salaries, graduation rates, demographics, vulnerable students, educational policy

Teacher salaries have been widely discussed in educational policy, often with the assumption that higher compensation supports improved student outcomes, including high school graduation rates (Papay & Kraft, 2015). Existing research indicates that teacher pay may influence teacher retention, access to qualified educators, and overall school stability; however, outcomes vary across student groups and regions. This study examines correlations between state-level teacher salaries during the 2018–19 academic year and graduation rates for major

demographic groups, including racial/ethnic populations and vulnerable student groups such as economically disadvantaged students and students with disabilities. The purpose of this research is to clarify whether higher teacher pay is consistently associated with improved graduation outcomes across these populations or whether additional targeted supports are required.

Materials and Methods

Data Sources

Teacher salary data for the 2018–19 academic year were obtained from the National Center for Education Statistics (NCES, 2019) and supplemented with figures from the National Education Association's *Rankings of the States* report (NEA, 2019). Graduation rates were taken from NCES's adjusted cohort graduation rate (ACGR) dataset and disaggregated by race/ethnicity (White, Asian, Black, Hispanic, American Indian/Alaska Native) and by student group (economically disadvantaged students, students with disabilities, homeless students, foster care students, and students with limited English proficiency).

Variables

The primary variables included (a) average

public school teacher salary by state and (b) state-level graduation rates for each demographic group.

Data Cleaning and Analysis

Pearson correlation coefficients were calculated to assess the relationship between teacher salaries and graduation rates across demographic categories. Missing data were coded as "NA." A heat map was generated to visualize correlation strengths, and a regional comparison provided additional context for understanding geographic patterns.

Results

Correlation Between Teacher Salaries and Graduation Rates

Pearson correlation analyses revealed notable variation in the strength and direction of associations between state-level teacher salaries and high school graduation rates across demographic groups. Moderate positive correlations were observed for Asian ($r = .28$), Black ($r = .21$), and Hispanic ($r = .24$) students, indicating that states with higher teacher salaries tended to report higher graduation outcomes for these populations. Correlations for White students ($r = .10$) and American Indian/Alaska Native students ($r = .12$) were weak and positive, suggesting minimal association between salary levels and graduation rates for these groups.

Table 1

Correlation Matrix by Demographic Group

Variable	Teacher Salary (2018-2019)
Total Graduation Rate	-0.17
American Indian / Alaska Native	0.12
Asian	0.28
Hispanic	0.24
Black	0.21
White	0.10
Economically Disadvantaged	-0.14
Limited English Proficiency	0.14

Students with Disabilities	-0.002
Homeless Students	-0.20
Foster Care Students	-0.35

Note. Values represent Pearson correlation coefficients between average teacher salaries (2018–2019) and adjusted cohort graduation rates (ACGR) by demographic group. Negative coefficients indicate an inverse association between salary level and graduation outcomes.

In contrast, correlations for vulnerable student groups were weakly negative or negligible. Economically disadvantaged students demonstrated a small negative correlation ($r = -.14$), while students with disabilities showed virtually no relationship with teacher salary levels ($r = -.00$). More pronounced negative correlations were identified for homeless students ($r = -.20$) and foster care students ($r = -.35$), suggesting that higher teacher salaries alone were not associated with improved graduation outcomes for

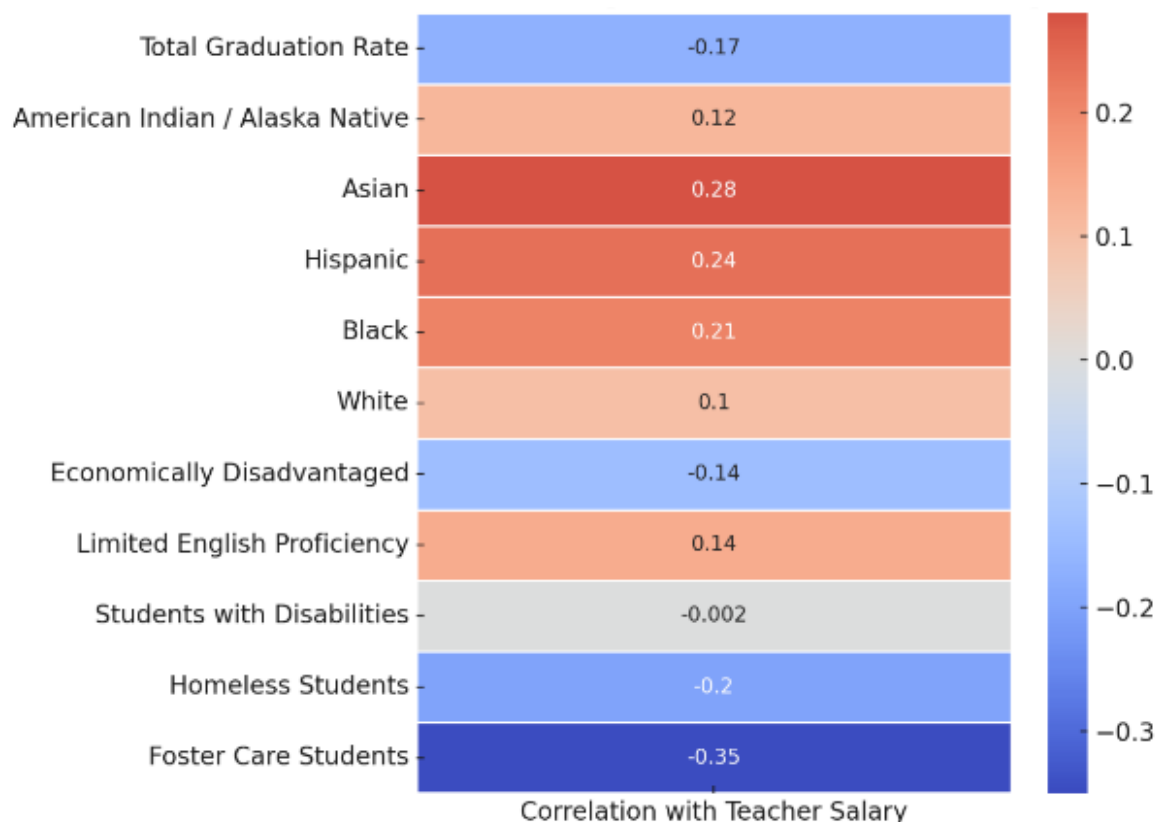
these populations.

Heat Map

Figure 1 is a heat map visually representing the correlations between teacher salary and graduation rates across all the demographic groups analyzed. The map highlights the strongest correlations (in red) for Asian, Black, and Hispanic students, while weaker or negative correlations are shown for students with disabilities, homeless students, and foster care students.

Figure 1

Correlation Between Teacher Salary and Graduation Rates by Demographic Group



Regional Analysis of Teacher Salary and Graduation Rates

Northeast Region States. Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

Average Salary. \$75,000 - \$82,000

Key Findings. Despite having some of the highest teacher salaries in the country, states like New York and Massachusetts did not show significantly higher graduation rates for Black and Hispanic students. However, Asian students showed better outcomes, which could be attributed to access to additional resources and higher levels of parental involvement (Hanushek & Rivkin, 2015).

Midwest Region States. Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

Average Salary. \$50,000 - \$65,000

Key Findings. Midwest states such as Minnesota and Wisconsin report strong graduation rates despite offering moderate teacher salaries. These states have invested heavily in special education services, which could explain better outcomes for economically disadvantaged students and students with disabilities (Jackson et al., 2014).

South Region States. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

Average Salary. \$45,000 - \$54,000

Key Findings. Southern states like Alabama and Texas show relatively high graduation rates for Black and Hispanic students, even with lower teacher salaries. This may be due to targeted interventions that focus on reducing dropout rates among minority

students (Darling-Hammond et al., 2019).

West Region States. Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Average Salary. \$48,000 - \$68,000

Key Findings. States like California offer higher teacher salaries but show only moderate graduation rates for economically disadvantaged and limited English proficiency students. This suggests that teacher salary increases alone are insufficient for overcoming socio-economic challenges (Steele et al., 2015).

Regional Patterns

A descriptive regional comparison provided additional context for interpreting state-level variability. In the Northeast, teacher salaries were among the highest nationally; however, graduation patterns for Black and Hispanic students were not consistently elevated, whereas Asian student outcomes were comparatively strong. Midwestern states, despite mid-range salaries, displayed relatively stable graduation rates across several groups, potentially reflecting broader state-level investments in student support services. In the South, some states exhibited relatively strong graduation outcomes for Black and Hispanic students despite lower average teacher salaries. In the West, higher salaries in several states did not correspond with strong graduation rates for economically disadvantaged students or students with limited English proficiency. These descriptive patterns suggest that regional contextual factors beyond salary may shape graduation outcomes.

Discussion

Findings from this study indicate that higher state-level teacher salaries are moderately associated with improved graduation outcomes for Asian, Black, and Hispanic students. These results align with prior

research linking competitive compensation to improved teacher retention, instructional quality, and school climate (Liu, 2020; Darling-Hammond et al., 2019). However, the weak correlations observed for White and American Indian/Alaska Native students suggest that salary levels may not exert uniform influence across demographic groups.

The negative or negligible correlations identified for vulnerable populations—including economically disadvantaged students, students with disabilities, homeless students, and foster care students—highlight limitations of salary-based strategies for improving outcomes among groups facing systemic barriers. These findings support the notion that vulnerable students may require specialized supports such as extended learning time, mental health services, individualized instruction, and coordinated wraparound care (Brown & Young, 2017; Steele et al., 2015). Salary increases alone do not address the complex social, emotional, and structural challenges influencing graduation outcomes for these

populations.

Regional differences further underscore the role of contextual factors, including state policy environments, funding structures, educator preparation pipelines, and community resources. Understanding these dynamics is essential for designing equitable policy interventions.

Conclusion

This study demonstrates that while competitive teacher salaries may positively influence graduation outcomes for some student populations, salary-based reforms are not sufficient to address disparities for vulnerable groups. A more holistic and equity-centered approach—integrating compensation reform with targeted academic and socio-emotional supports—may be necessary to promote improved outcomes across all demographic groups. Future research should explore within-state variation and additional contextual variables to better understand the mechanisms linking teacher compensation to student success.

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