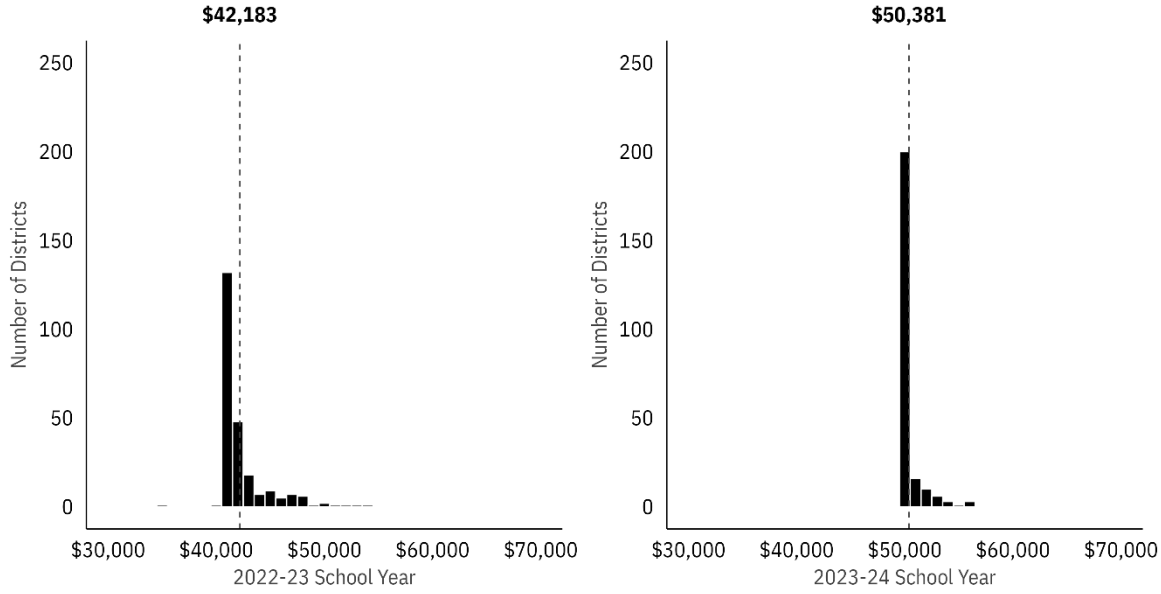
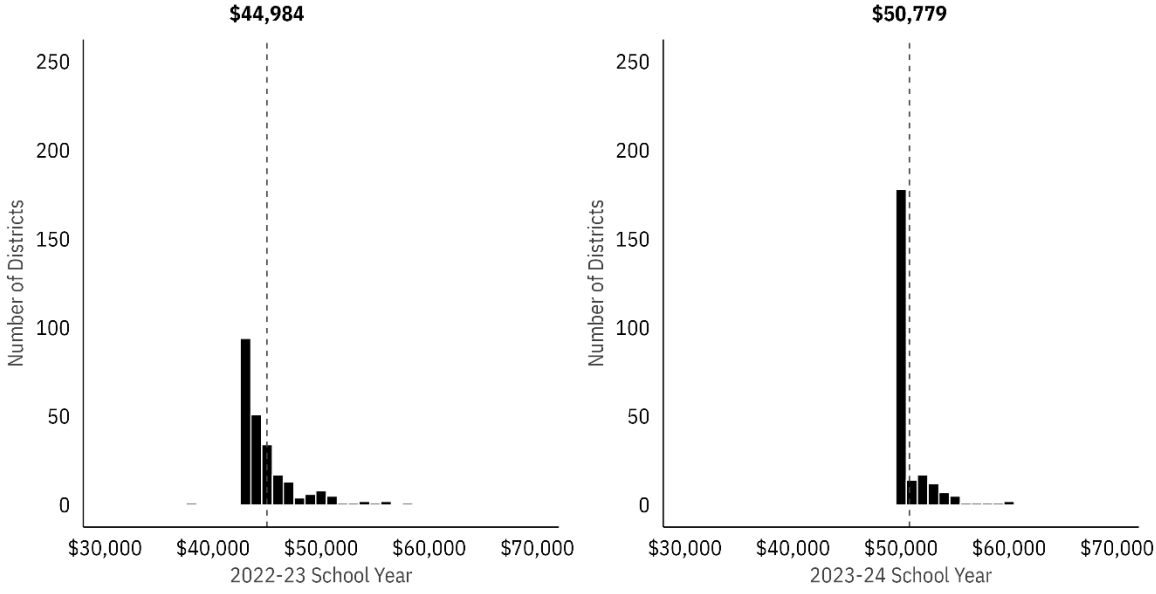
Appendix A: Teacher Salary Schedules for Those Holding a Master's Degree

Figure A.1 -Distribution of Teacher Salaries

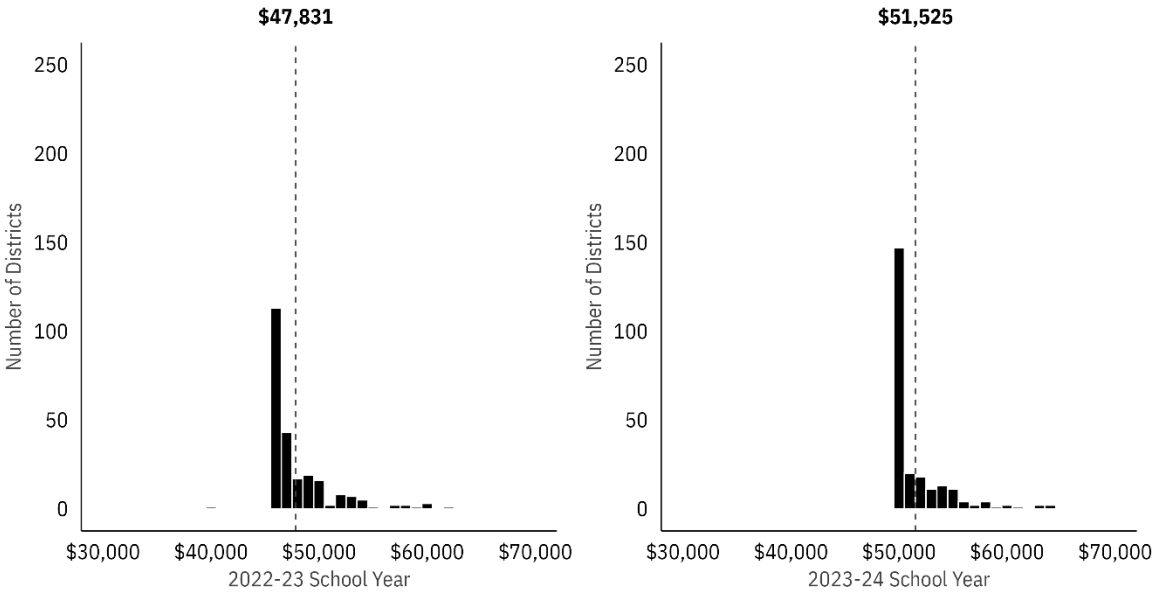
Entry-Level Teacher Salaries



5 Years of Experience



10 Years of Experience



15 Years of Experience

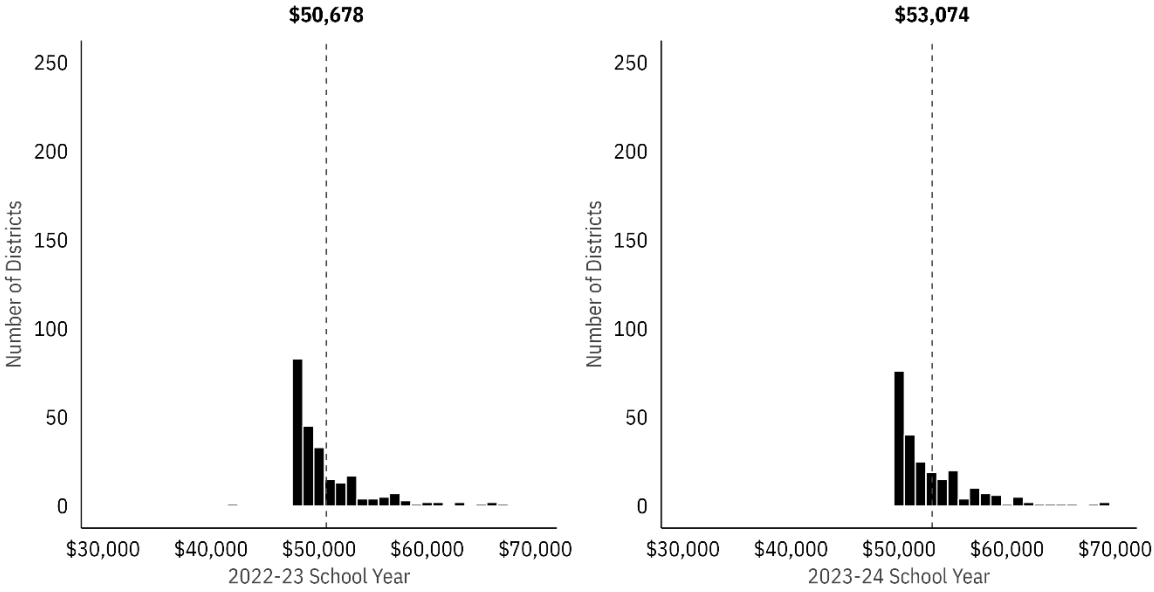
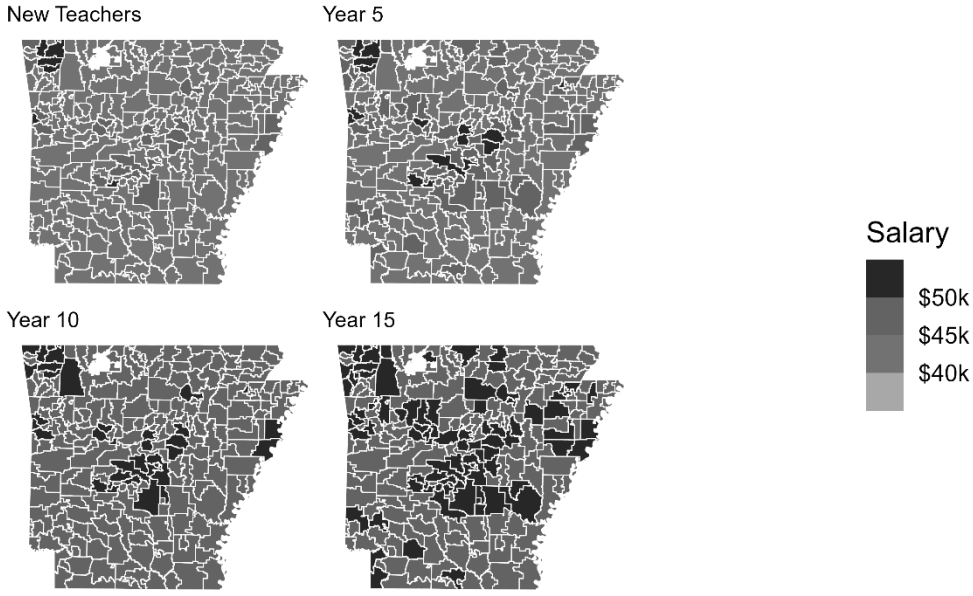
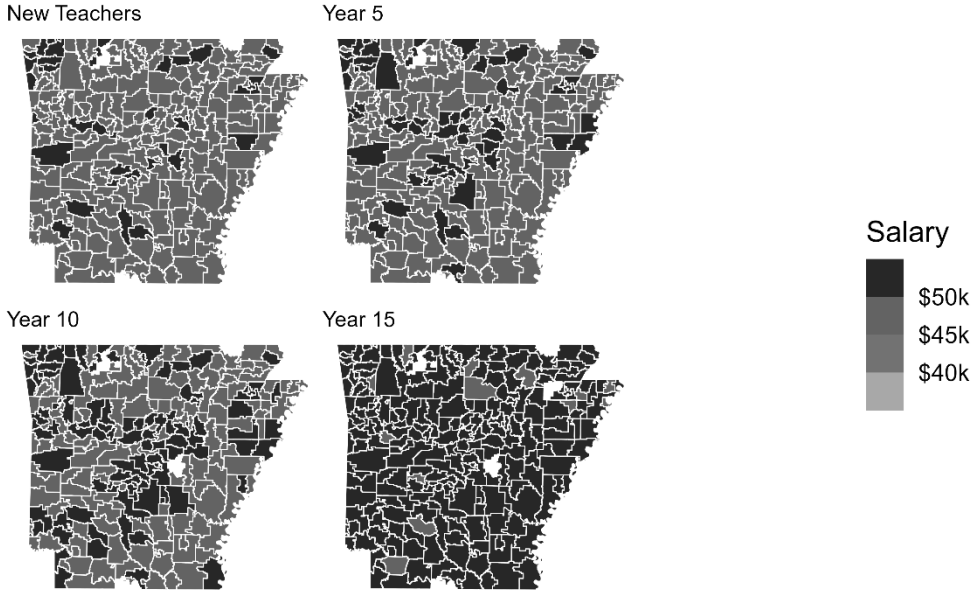


Figure A.2 - Teacher Salaries by Years of Experience & District

2022-2023 School Year



2023-2024 School Year



Appendix B: Estimates Using a Naïve Difference-in-Differences Approach

Table B.1: Estimated Effects of LEARNS Salary Raises (Naïve DiD Specification)

Panel A: Effect of LEARNS Raise (any amount over $2,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect of Any Raise	0.008*	-0.000	-0.001	-0.006**	-0.002
	(0.003)	(0.002)	(0.001)	(0.002)	(0.002)
Observations	371,897	331,457	322,159	329,478	323,658

Panel B: Effect of LEARNS Raise (per $1,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect per $1,000	0.002**	-0.001*	-0.000	-0.001**	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	371,897	331,457	322,159	329,478	323,658

Panel C: Effect of LEARNS Raise (Binned)

	Stayer	Mover	Switcher	Exiter	Retiree
Raise: $2,000-3,999	-0.005	0.008*	0.000	-0.001	0.000
	(0.005)	(0.004)	(0.002)	(0.003)	(0.003)
Raise: $4,000-5,999	0.002	0.004	-0.002	-0.001	-0.004
	(0.005)	(0.004)	(0.002)	(0.004)	(0.003)
Raise: $6,000-7,999	0.007	-0.000	-0.001	-0.004	-0.003
	(0.005)	(0.004)	(0.002)	(0.004)	(0.003)
Raise: ≥ $8,000	0.018**	-0.007*	-0.002	-0.013**	-0.002
	(0.005)	(0.004)	(0.001)	(0.003)	(0.002)
Observations	382,157	340,167	329,838	337,854	331,706

Notes: Estimated using the two-stage estimator (Gardner et al. 2026). Standard errors clustered at the district-by-step-by-lane level. Each column of each panel represents results from a separate regression. ** refers to p-value < 0.01; * refers to p-value < 0.05; + refers to p-value < 0.10.

Appendix C: AR LEARNS Salary Changes Effects- Three-Way Fixed Effects Estimates

Table C.1: Estimated Effects of LEARNS Salary Raises (TWFE Estimator)

Panel A: Effect of LEARNS Raise (any amount over $2,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect of Any Raise	0.011**	-0.005+	-0.004+	-0.004	0.001
	(0.004)	(0.003)	(0.002)	(0.003)	(0.002)
Observations	372,507	330,158	324,322	332,176	322,860

Panel B: Effect of LEARNS Raise (per $1,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect per $1,000	0.004***	-0.002***	-0.001+	-0.003***	-0.000
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Observations	372,507	330,158	324,322	332,176	322,860

Panel C: Effect of LEARNS Raise (Binned)

	Stayer	Mover	Switcher	Exiter	Retiree
Raise: $2,000-3,999	-0.001	-0.002	-0.002	0.004	0.002
	(0.006)	(0.004)	(0.003)	(0.004)	(0.002)
Raise: $4,000-5,999	0.007	-0.002	-0.005	-0.001	0.000
	(0.006)	(0.004)	(0.003)	(0.004)	(0.002)
Raise: $6,000-7,999	0.021***	-0.008+	-0.007*	-0.011*	-0.000
	(0.006)	(0.005)	(0.003)	(0.004)	(0.002)
Raise: ≥ $8,000	0.027***	-0.014**	-0.004	-0.016***	0.000
	(0.006)	(0.005)	(0.003)	(0.004)	(0.002)
Observations	372,940	330,496	324,652	332,509	323,159

Notes: Estimated using a three-way fixed effects estimator. Standard errors clustered at the district-by-step-by-lane level. Each column of each panel represents results from a separate regression. ** refers to p-value < 0.01; * refers to p-value < 0.05; + refers to p-value < 0.10.

Appendix D: AR LEARNS Salary Changes Effects- Moves Within District Separated

Table D.1: Estimated Effects of LEARNS Salary Raises

Panel A: Effect of LEARNS Raise (any amount over $2,000)

	Stayer	Mover (Same District)	Mover (New District)	Switcher	Exiter	Retiree
Effect of Any Raise	0.014+	-0.006	-0.002	-0.008+	0.005	-0.007*
	(0.007)	(0.005)	(0.001)	(0.005)	(0.005)	(0.003)
Observations	371,876	313,428	304,128	311,448	311,588	305,638

Panel B: Effect of LEARNS Raise (per $1,000)

	Stayer	Mover (Same District)	Mover (New District)	Switcher	Exiter	Retiree
Effect per $1,000	0.003*	-0.002+	-0.000	-0.002	0.001	-0.001+
	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
Observations	371,876	313,428	304,128	311,448	311,588	305,638

Panel C: Effect of LEARNS Raise (Binned)

	Stayer	Mover (Same District)	Mover (New District)	Switcher	Exiter	Retiree
Raise: $2,000-3,999	0.003	0.004	-0.000	-0.003	-0.001	-0.003
	(0.007)	(0.004)	(0.003)	(0.005)	(0.004)	(0.004)
Raise: $4,000-5,999	0.006	-0.002	-0.002	-0.004	0.008+	-0.007+
	(0.007)	(0.005)	(0.002)	(0.006)	(0.005)	(0.004)
Raise: $6,000-7,999	0.016*	-0.009	-0.002	-0.008	0.006	-0.008+
	(0.008)	(0.006)	(0.002)	(0.006)	(0.005)	(0.005)
Raise: ≥ $8,000	0.024+	-0.014+	-0.002	-0.014	0.005	-0.007
	(0.012)	(0.008)	(0.002)	(0.010)	(0.008)	(0.006)
Observations	372,033	313,535	304,207	311,554	311,673	305,727

Notes: Estimated using the two-stage estimator (Gardner et al. 2026). Standard errors clustered at the district-by-step-by-lane level. Each column of each panel represents results from a separate regression. ** refers to p-value < 0.01; * refers to p-value < 0.05; + refers to p-value < 0.10.

Appendix E: AR LEARNS Salary Changes Effects-Correcting for Cost of Living

Table E.1: Estimated Effects of LEARNS Salary Raises

Panel A: Effect of LEARNS Raise per $1,000 (Original Estimates)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect per $1,000	0.004**	-0.002*	-0.000	-0.002*	-0.001**
	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)
Observations	371,876	331,439	322,140	329,458	323,640

Panel B: Effect of LEARNS Raise per $1,000 (CWIFT Adjusted)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect per $1,000	0.003**	-0.001+	-0.000	-0.002*	-0.001**
	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)
Observations	369,517	329,472	320,479	327,536	321,854

Notes: Estimated using two-stage estimator (Gardner et al. 2026). Standard errors clustered at the district-by-step-by-lane level. Each column of each panel represents results from a separate regression. ** refers to p-value < 0.01; * refers to p-value < 0.05; + refers to p-value < 0.10.

Appendix F: Heterogeneous Effects by Subject Areas of Shortage

As described in Section 6.2, we explore heterogeneity in treatment effects by shortage subject areas through a simple augmentation of our primary estimating equations. Specifically, we interact the treatment variable(s) in Equation (3) with indicators of having a primary teaching assignment in one of the subject areas often cited as shortage areas in the literature or as defined by the Arkansas Department of Education. Including these interaction terms allows our models to estimate a differential effect for teachers of certain subject areas, but does not directly report the net effect of LEARNS Act raises for teachers in these subject areas; a potentially policy-relevant estimand.

To obtain these estimates of the net overall effect, we report the average marginal effect, which corresponds to the combined main effect (for teachers not of that subject area) and differential effect (for teachers of that subject area) in Tables F.1 through F.5. The stars and standard errors in each table correspond to a test of whether the overall net effect is different from zero. Below each standard error, we also report a p-value for statistical significance of just the differential effect in brackets, thereby allowing readers to ascertain if the differential effect for teachers of a particular subject area is statistically significantly different than for teachers not of that subject area.

As in our main results reported in Table 3, each panel reports results using a different definition of treatment variables (any amount over $2,000, per $1,000 increase, and binned increases). Each Table F.1 to F.5 reports the average marginal effect for teachers of the indicated subject area.

Table F.1 - Effects of Salary Raises on Teacher Retention, Mathematics

Panel A: Effect of LEARNS Raise (any amount over $2,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect of Any Raise	0.012	-0.006	-0.006	-0.007	-0.001
	(0.010)	(0.008)	(0.005)	(0.006)	(0.003)
	[0.405]	[0.612]	[0.906]	[0.990]	[0.917]
Observations	371,876	331,439	322,140	329,458	323,640

Panel B: Effect of LEARNS Raise (per $1,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect per $1,000	0.003	-0.002	-0.001	-0.002	-0.000
	(0.002)	(0.001)	(0.001)	(0.001)	(0.000)
	[0.403]	[0.910]	[0.475]	[0.936]	[0.993]
Observations	371,876	331,439	322,140	329,458	323,640

Panel C: Effect of LEARNS Raise (Binned)

	Stayer	Mover	Switcher	Exiter	Retiree
Raise: $2,001-4,000	-0.016	0.010	-0.006	0.006	0.005
	(0.020)	(0.015)	(0.011)	(0.010)	(0.007)
	[0.309]	[0.348]	[0.772]	[0.808]	[0.523]
Raise: $4,001-6,000	0.019	-0.002	-0.005	-0.007	-0.007
	(0.018)	(0.015)	(0.010)	(0.010)	(0.004)
	[0.729]	[0.813]	[0.818]	[0.645]	[0.128]
Raise: $6,001-8,000	0.015	-0.013	-0.006	-0.001	0.001
	(0.021)	(0.016)	(0.012)	(0.012)	(0.007)
	[0.671]	[0.789]	[0.818]	[0.428]	[0.664]
Raise: > $8,000	0.021	-0.012	-0.007	-0.017	-0.002
	(0.016)	(0.013)	(0.007)	(0.011)	(0.003)
	[0.490]	[0.812]	[0.856]	[0.780]	[0.992]
Observations	372,033	331,555	322,225	329,577	323,736

Notes: Estimated using the two-stage estimator (Gardner et al. 2026). Standard errors for average marginal effect shown in parentheses and clustered at the district-by-step-by-lane level. P-value for a test of differential effects shown in brackets. Each column of each panel represents results from a separate regression. ** refers to p-value < 0.01; * refers to p-value < 0.05; + refers to p-value < 0.10.

Table F.2 - Effects of Salary Raises on Teacher Retention, Science

Panel A: Effect of LEARNS Raise (any amount over $2,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect of Any Raise	0.029**	-0.005	-0.015**	-0.014+	-0.003
	(0.011)	(0.008)	(0.005)	(0.008)	(0.004)
	[0.276]	[0.570]	[0.042]	[0.318]	[0.670]
Observations	371,876	331,439	322,140	329,458	323,640

Panel B: Effect of LEARNS Raise (per $1,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect per $1,000	0.004*	0.000	-0.002**	-0.003*	-0.001
	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
	[0.835]	[0.120]	[0.152]	[0.291]	[0.532]
Observations	371,876	331,439	322,140	329,458	323,640

Panel C: Effect of LEARNS Raise (Binned)

	Stayer	Mover	Switcher	Exiter	Retiree
Raise: $2,001-4,000	0.028	-0.016	-0.013	-0.011	0.009
	(0.020)	(0.014)	(0.010)	(0.013)	(0.012)
	[0.189]	[0.344]	[0.302]	[0.240]	[0.469]
Raise: $4,001-6,000	0.039*	-0.017	-0.022**	-0.004	-0.012+
	(0.018)	(0.013)	(0.007)	(0.014)	(0.007)
	[0.118]	[0.326]	[0.022]	[0.898]	[0.118]
Raise: $6,001-8,000	0.012	-0.001	-0.011	0.007	-0.003
	(0.022)	(0.018)	(0.012)	(0.017)	(0.010)
	[0.599]	[0.653]	[0.784]	[0.314]	[0.892]
Raise: > $8,000	0.032+	0.007	-0.013+	-0.034*	-0.002
	(0.018)	(0.015)	(0.007)	(0.014)	(0.005)
	[0.908]	[0.096]	[0.457]	[0.108]	[0.953]
Observations	372,033	331,555	322,225	329,577	323,736

Notes: Estimated using the two-stage estimator (Gardner et al. 2026). Standard errors for average marginal effect shown in parentheses and clustered at the district-by-step-by-lane level. P-value for a test of differential effects shown in brackets. Each column of each panel represents results from a separate regression. ** refers to p-value < 0.01; * refers to p-value < 0.05; + refers to p-value < 0.10.

Table F.3 - Effects of Salary Raises on Teacher Retention, STEM

Panel A: Effect of LEARNS Raise (any amount over $2,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect of Any Raise	0.020*	-0.005	-0.010**	-0.002	-0.000
	(0.008)	(0.006)	(0.004)	(0.008)	(0.003)
	[0.900]	[0.396]	[0.165]	[0.431]	[0.753]
Observations	371,876	331,439	322,140	329,458	323,640

Panel B: Effect of LEARNS Raise (per $1,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect per $1,000	0.003*	-0.001	-0.001*	-0.001	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
	[0.633]	[0.205]	[0.644]	[0.459]	[0.397]
Observations	371,876	331,439	322,140	329,458	323,640

Panel C: Effect of LEARNS Raise (Binned)

	Stayer	Mover	Switcher	Exiter	Retiree
Raise: $2,001-4,000	0.003	-0.002	-0.009	0.019	0.002
	(0.015)	(0.011)	(0.008)	(0.015)	(0.009)
	[0.978]	[0.818]	[0.352]	[0.307]	[0.896]
Raise: $4,001-6,000	0.029*	-0.009	-0.013*	-0.009	-0.003
	(0.013)	(0.010)	(0.007)	(0.014)	(0.005)
	[0.167]	[0.661]	[0.214]	[0.614]	[0.615]
Raise: $6,001-8,000	0.014	-0.008	-0.009	-0.009	0.005
	(0.016)	(0.013)	(0.009)	(0.015)	(0.009)
	[0.494]	[0.866]	[0.925]	[0.975]	[0.480]
Raise: > $8,000	0.026*	-0.003	-0.010+	-0.004	-0.001
	(0.013)	(0.011)	(0.006)	(0.013)	(0.003)
	[0.657]	[0.152]	[0.658]	[0.350]	[0.843]
Observations	372,033	331,555	322,225	329,577	323,736

Notes: Estimated using the two-stage estimator (Gardner et al. 2026). Standard errors for average marginal effect shown in parentheses and clustered at the district-by-step-by-lane level. P-value for a test of differential effects shown in brackets. Each column of each panel represents results from a separate regression. ** refers to p-value < 0.01; * refers to p-value < 0.05; + refers to p-value < 0.10.

Table F.4 - Effects of Salary Raises on Teacher Retention, Special Education

Panel A: Effect of LEARNS Raise (any amount over $2,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect of Any Raise	-0.004	-0.016*	0.021**	0.004	0.001
	(0.010)	(0.007)	(0.006)	(0.007)	(0.004)
	[0.003]	[0.252]	[0.000]	[0.073]	[0.482]
Observations	371,876	331,439	322,140	329,458	323,640

Panel B: Effect of LEARNS Raise (per $1,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect per $1,000	0.001	-0.005**	0.003**	0.000	-0.000
	(0.002)	(0.001)	(0.001)	(0.002)	(0.000)
	[0.066]	[0.007]	[0.000]	[0.098]	[0.803]
Observations	371,876	331,439	322,140	329,458	323,640

Panel C: Effect of LEARNS Raise (Binned)

	Stayer	Mover	Switcher	Exiter	Retiree
Raise: $2,001-4,000	-0.015	-0.007	0.021+	0.011	0.002
	(0.017)	(0.012)	(0.012)	(0.012)	(0.008)
	[0.200]	[0.747]	[0.023]	[0.484]	[0.808]
Raise: $4,001-6,000	-0.012	-0.005	0.009	0.011	0.006
	(0.016)	(0.011)	(0.010)	(0.012)	(0.006)
	[0.066]	[0.977]	[0.050]	[0.209]	[0.171]
Raise: $6,001-8,000	0.012	-0.007	0.014	-0.016	-0.004
	(0.018)	(0.014)	(0.011)	(0.013)	(0.007)
	[0.415]	[0.827]	[0.023]	[0.576]	[0.765]
Raise: > $8,000	0.003	-0.045**	0.039**	0.007	-0.003
	(0.019)	(0.013)	(0.012)	(0.015)	(0.004)
	[0.093]	[0.005]	[0.000]	[0.114]	[0.843]
Observations	372,033	331,555	322,225	329,577	323,736

Notes: Estimated using the two-stage estimator (Gardner et al. 2026). Standard errors for average marginal effect shown in parentheses and clustered at the district-by-step-by-lane level. P-value for a test of differential effects shown in brackets. Each column of each panel represents results from a separate regression. ** refers to p-value < 0.01; * refers to p-value < 0.05; + refers to p-value < 0.10.

Table F.5 - Effects of Salary Raises on Teacher Retention, AR High Needs Subjects

Panel A: Effect of LEARNS Raise (any amount over $2,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect of Any Raise	0.022*	-0.011	-0.006	-0.010	-0.001
	(0.010)	(0.007)	(0.005)	(0.007)	(0.003)
	[0.758]	[0.815]	[0.856]	[0.611]	[0.827]
Observations	371,876	331,439	322,140	329,458	323,640

Panel B: Effect of LEARNS Raise (per $1,000)

	Stayer	Mover	Switcher	Exiter	Retiree
Effect per $1,000	0.004*	-0.001	-0.001	-0.002	-0.000
	(0.002)	(0.001)	(0.001)	(0.001)	(0.000)
	[0.776]	[0.665]	[0.546]	[0.784]	[0.614]
Observations	371,876	331,439	322,140	329,458	323,640

Panel C: Effect of LEARNS Raise (Binned)

	Stayer	Mover	Switcher	Exiter	Retiree
Raise: $2,001-4,000	0.012	-0.017	-0.006	0.007	0.004
	(0.018)	(0.012)	(0.010)	(0.013)	(0.008)
	[0.609]	[0.251]	[0.732]	[0.781]	[0.717]
Raise: $4,001-6,000	0.033*	-0.015	-0.005	-0.018	-0.007
	(0.017)	(0.012)	(0.008)	(0.013)	(0.005)
	[0.201]	[0.366]	[0.865]	[0.200]	[0.232]
Raise: $6,001-8,000	0.018	-0.002	-0.008	-0.017	0.002
	(0.020)	(0.016)	(0.011)	(0.014)	(0.006)
	[0.783]	[0.615]	[0.992]	[0.584]	[0.566]
Raise: > $8,000	0.022	-0.008	-0.005	-0.012	0.000
	(0.015)	(0.012)	(0.006)	(0.013)	(0.004)
	[0.535]	[0.540]	[0.558]	[0.819]	[0.528]
Observations	372,033	331,555	322,225	329,577	323,736

Notes: Estimated using the two-stage estimator (Gardner et al. 2026). Standard errors for average marginal effect shown in parentheses and clustered at the district-by-step-by-lane level. P-value for a test of differential effects shown in brackets. Each column of each panel represents results from a separate regression. ** refers to p-value < 0.01; * refers to p-value < 0.05; + refers to p-value < 0.10.