

Table A1*Regression estimates from models predicting each school quality measure as a function of school covariates only*

	Multidimensional measure		ELA			Math		
	(1) A-F grade	(2) % possible points	(3) Proficiency	(4) Learning gains	(5) Learning gains of bottom 25%	(6) Proficiency	(7) Learning gains	(8) Learning gains of bottom 25%
Economic disadvantage	-0.017*** (0.001)	-0.197*** (0.007)	-0.300*** (0.009)	-0.155*** (0.007)	-0.100*** (0.010)	-0.254*** (0.010)	-0.166*** (0.010)	-0.130*** (0.011)
Black	-0.009*** (0.001)	-0.095*** (0.010)	-0.245*** (0.011)	-0.038*** (0.010)	0.053*** (0.013)	-0.299*** (0.014)	0.003 (0.013)	0.129*** (0.015)
Hispanic	0.003*** (0.001)	0.064*** (0.011)	0.061*** (0.014)	0.075*** (0.011)	0.106*** (0.015)	-0.023 (0.017)	0.099*** (0.015)	0.157*** (0.017)
Asian or Pacific Islander	0.017*** (0.004)	0.342*** (0.047)	0.543*** (0.056)	0.374*** (0.047)	0.228*** (0.063)	0.438*** (0.068)	0.280*** (0.063)	0.068 (0.072)
Indigenous	-0.017 (0.010)	-0.064 (0.112)	-0.287* (0.134)	-0.031 (0.112)	0.026 (0.150)	-0.063 (0.163)	-0.020 (0.150)	0.317 (0.172)
2+ races	-0.049*** (0.007)	-0.551*** (0.073)	-0.709*** (0.087)	-0.435*** (0.072)	-0.187 (0.101)	-0.789*** (0.105)	-0.360*** (0.097)	-0.382*** (0.115)
Students with Disabilities	-0.014*** (0.003)	-0.254*** (0.030)	-0.350*** (0.036)	-0.212*** (0.030)	-0.162*** (0.040)	-0.378*** (0.044)	-0.216*** (0.040)	-0.135** (0.046)
English learners	-0.011*** (0.002)	-0.173*** (0.019)	-0.354*** (0.023)	-0.060** (0.019)	-0.072** (0.025)	-0.261*** (0.027)	-0.072** (0.025)	-0.052 (0.029)
Constant	4.718*** (0.090)	79.471*** (1.004)	92.344*** (1.194)	75.156*** (0.997)	57.843*** (1.342)	96.677*** (1.452)	77.906*** (1.337)	61.864*** (1.536)
<i>N</i>	3,073	3,073	3,073	3,073	3,047	3,073	3,073	3,047
<i>R</i> ²	0.435	0.485	0.672	0.485	0.284	0.577	0.351	0.156
Adjusted <i>R</i> ²	0.433	0.482	0.671	0.483	0.280	0.575	0.348	0.153

NOTE: Estimates from regressions predicting each subcomponent as a function of school and county covariates. All models include school-level fixed effects, a charter indicator, and locale fixed effects. A-F grade measured on a 0-4 GPA scale, all other outcomes measured on a 0-100 percentage scale. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Citation: Burrell, N., & Harbatkin, E. (2024). Beyond the school building: Examining the association between out-of-school factors and multidimensional school grades. *Education Policy Analysis Archives*, 32(32). <https://doi.org/10.14507/epaa.32.8497>

Table A2*Regression estimates from models predicting each school quality measure as a function of county covariates only*

	Multidimensional measure		ELA			Math		
	(1) A-F grade	(2) % possible points	(3) Proficiency	(4) Learning gains	(5) Learning gains of bottom 25%	(6) Proficiency	(7) Learning gains	(8) Learning gains of bottom 25%
Unemployment Rate	-0.298*** (0.054)	-3.345*** (0.627)	-1.637 (0.936)	-1.470** (0.546)	-2.173*** (0.633)	-4.950*** (0.977)	-4.966*** (0.672)	-4.834*** (0.713)
SNAP Eligibility	0.019* (0.009)	0.232* (0.103)	0.195 (0.154)	-0.041 (0.090)	0.226* (0.104)	0.508** (0.160)	-0.015 (0.110)	-0.039 (0.117)
Child poverty	-0.002 (0.012)	-0.034 (0.141)	0.267 (0.210)	-0.065 (0.123)	-0.260 (0.142)	0.276 (0.220)	-0.171 (0.151)	-0.285 (0.160)
Above Bachelor's	0.028*** (0.006)	0.341*** (0.071)	0.695*** (0.106)	0.360*** (0.062)	0.257*** (0.071)	0.498*** (0.110)	0.148 (0.076)	0.027 (0.080)
Black	-0.001 (0.004)	-0.006 (0.041)	-0.203*** (0.062)	0.129*** (0.036)	0.178*** (0.042)	-0.291*** (0.064)	0.225*** (0.044)	0.416*** (0.047)
Hispanic	0.010*** (0.003)	0.120*** (0.036)	0.052 (0.054)	0.182*** (0.031)	0.146*** (0.037)	-0.040 (0.056)	0.285*** (0.039)	0.347*** (0.041)
Indigenous	-0.514* (0.233)	-5.362* (2.707)	-5.891 (4.043)	-3.137 (2.356)	-2.132 (2.722)	-5.922 (4.220)	-2.488 (2.901)	-1.126 (3.063)
Asian or Pacific Islander	-0.097*** (0.024)	-1.011*** (0.283)	-2.399*** (0.423)	-1.398*** (0.246)	-1.098*** (0.285)	-1.026* (0.441)	-0.511 (0.303)	-0.658* (0.321)
2+ races	0.098** (0.037)	0.884* (0.425)	2.046** (0.635)	1.160** (0.370)	0.543 (0.429)	0.117 (0.663)	0.807 (0.456)	0.453 (0.483)
Constant	2.670*** (0.455)	54.619*** (5.288)	30.667*** (7.898)	50.187*** (4.602)	50.298*** (5.334)	57.998*** (8.243)	72.697*** (5.666)	68.852*** (6.010)
<i>N</i>	3,073	3,073	3,073	3,073	3,047	3,073	3,073	3,047
<i>R</i> ²	0.110	0.116	0.113	0.322	0.287	0.158	0.279	0.194
Adjusted <i>R</i> ²	0.106	0.112	0.108	0.319	0.283	0.154	0.275	0.190

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NOTE: Estimates from regressions predicting each subcomponent as a function of school and county covariates. All models include school-level fixed effects, a charter indicator, and locale fixed effects. A-F grade measured on a 0-4 GPA scale, all other outcomes measured on a 0-100 percentage scale. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A3

Regression estimates from models predicting each multidimensional school quality measure, by governance structure

	A-F grade				% possible points			
	School covariates only		County covariates only		School covariates only		County covariates only	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	TPS	Charter	TPS	Charter	TPS	Charter	TPS	Charter
<i>School-level variables</i>								
Economic disadvantage	-0.019*** (0.001)	-0.007*** (0.002)			-0.225*** (0.008)	-0.085*** (0.019)		
Black	-0.007*** (0.001)	-0.019*** (0.003)			-0.075*** (0.010)	-0.211*** (0.031)		
Hispanic	0.004** (0.001)	-0.002 (0.003)			0.060*** (0.012)	0.023 (0.032)		
Asian or Pacific Islander	0.021*** (0.005)	0.002 (0.010)			0.351*** (0.051)	0.286* (0.123)		
Indigenous	-0.055*** (0.015)	0.022 (0.015)			-0.441** (0.164)	0.319 (0.183)		
2+ races	-0.054*** (0.007)	-0.036* (0.014)			-0.595*** (0.082)	-0.421* (0.169)		
Students with Disabilities	-0.008** (0.003)	-0.045*** (0.009)			-0.194*** (0.030)	-0.542*** (0.106)		
English learners	-0.009*** (0.002)	-0.019*** (0.005)			-0.152*** (0.020)	-0.273*** (0.057)		
<i>County-level variables</i>								
Unemployment Rate			-0.328*** (0.056)	0.000 (0.173)			-3.558*** (0.650)	-0.712 (2.118)

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	A-F grade				% possible points			
	School covariates only		County covariates only		School covariates only		County covariates only	
	(1) TPS	(2) Charter	(3) TPS	(4) Charter	(5) TPS	(6) Charter	(7) TPS	(8) Charter
SNAP Eligibility			0.022* (0.009)	0.011 (0.027)			0.243* (0.108)	0.246 (0.329)
Child poverty			0.003 (0.012)	-0.080 (0.050)			0.035 (0.144)	-1.006 (0.611)
Above Bachelor's			0.029*** (0.006)	0.023 (0.023)			0.351*** (0.072)	0.237 (0.279)
Black			-0.000 (0.004)	-0.000 (0.010)			0.005 (0.044)	-0.015 (0.121)
Hispanic			0.008** (0.003)	0.023* (0.010)			0.095* (0.037)	0.276* (0.128)
Indigenous			-0.790** (0.246)	1.390 (0.724)			-8.762** (2.828)	16.897 (8.844)
Asian or Pacific Islander			-0.096*** (0.025)	-0.121 (0.094)			-1.050*** (0.290)	-0.935 (1.143)
2+ races			0.084* (0.038)	0.348* (0.140)			0.717 (0.433)	3.612* (1.705)
Constant	4.796*** (0.097)	4.736*** (0.239)	2.792*** (0.472)	1.865 (1.656)	80.713*** (1.057)	76.857*** (2.849)	55.503*** (5.435)	49.890* (20.212)
N	2,624	449	2,624	449	2,624	449	2,624	449
R ²	0.471	0.353	0.118	0.070	0.523	0.384	0.123	0.075
Adjusted R ²	0.468	0.334	0.114	0.040	0.521	0.366	0.118	0.046

NOTE: Estimates from regressions predicting each subcomponent as a function of school and county covariates. All models include school-level fixed effects and locale fixed effects. A-F grade measured on a 0-4 GPA scale, percent possible points measured on a 0-100 percentage scale. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A4

Regression estimates from models regressing teacher quality variables on school and county covariates, by school governance structure (mediation path a)

	Out-of-field		Highly effective		Unsatisfactory	
	(1) TPS	(2) Charter	(3) TPS	(4) Charter	(5) TPS	(6) Charter
School-level variables						
Economic disadvantage	-0.024** (0.009)	-0.005 (0.032)	-0.159*** (0.026)	-0.089 (0.087)	-0.001 (0.001)	0.006 (0.004)
Black	0.136*** (0.013)	0.201*** (0.059)	-0.278*** (0.037)	-0.372* (0.161)	0.003 (0.002)	-0.004 (0.007)
Hispanic	0.055*** (0.015)	0.190** (0.061)	0.026 (0.043)	0.142 (0.166)	-0.001 (0.002)	-0.001 (0.007)
Asian or Pacific Islander	0.021 (0.049)	-0.119 (0.205)	0.073 (0.146)	0.740 (0.561)	0.001 (0.008)	-0.019 (0.024)
Indigenous	0.912*** (0.153)	0.897 (0.632)	-0.158 (0.453)	0.220 (1.732)	-0.039 (0.024)	-0.001 (0.073)
2+ races	0.129 (0.082)	0.626* (0.280)	-0.434 (0.243)	-1.584* (0.768)	-0.007 (0.013)	0.089** (0.032)
Students with Disabilities	0.220*** (0.029)	0.047 (0.169)	0.159 (0.086)	0.531 (0.462)	0.003 (0.005)	-0.004 (0.020)
English learners	0.095*** (0.019)	0.261** (0.081)	-0.115* (0.056)	-0.633** (0.222)	-0.000 (0.003)	0.002 (0.009)
County-level variables						
Unemployment Rate	-0.744 (0.438)	-7.247** (2.430)	6.782*** (1.295)	-9.874 (6.660)	0.263*** (0.069)	-0.340 (0.281)
SNAP Eligibility	-0.366*** (0.078)	1.739*** (0.420)	-2.458*** (0.229)	1.010 (1.151)	0.056*** (0.012)	-0.097* (0.049)
Child poverty	0.243* (0.096)	3.593*** (0.679)	1.439*** (0.284)	-3.381 (1.860)	0.319*** (0.015)	0.000 (0.079)
Above Bachelor's	-0.102* (0.049)	0.733* (0.296)	1.321*** (0.144)	2.060* (0.812)	0.137*** (0.008)	-0.058 (0.034)
Black	0.242*** (0.034)	-0.885*** (0.185)	0.302** (0.100)	0.168 (0.507)	-0.082*** (0.005)	0.035 (0.021)
Hispanic	-0.019 (0.029)	-1.098*** (0.179)	0.291*** (0.084)	0.919 (0.490)	-0.056*** (0.004)	0.030 (0.021)
Indigenous	2.217	-134.644***	-2.868	21.368	0.367	-0.258

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	Out-of-field		Highly effective		Unsatisfactory	
	(1) TPS	(2) Charter	(3) TPS	(4) Charter	(5) TPS	(6) Charter
	(1.915)	(25.819)	(5.664)	(70.753)	(0.302)	(2.989)
Asian or Pacific Islander	-1.043*** (0.201)	-3.713** (1.336)	-4.946*** (0.594)	-5.132 (3.660)	-0.175*** (0.032)	0.180 (0.155)
2+ races	-1.447*** (0.301)	-2.497 (2.197)	8.608*** (0.890)	18.424** (6.020)	-0.475*** (0.047)	-0.102 (0.254)
Constant	10.307** (3.794)	-1.352 (21.031)	-9.582 (11.223)	20.054 (57.632)	-7.688*** (0.598)	2.937 (2.435)
<i>N</i>	2,615	356	2,615	356	2,615	356
<i>R</i> ²	0.259	0.370	0.412	0.256	0.269	0.073
Adjusted <i>R</i> ²	0.252	0.329	0.407	0.207	0.263	0.012

NOTE: Sample restricted to just those schools with teacher quality variables. All models include school-level fixed effects and locale fixed effects. All teacher quality variables measured on a 0-100 percentage scale. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A5*Regression estimates from unmediated and mediated models predicting A-F grade and percent possible points*

	A-F grade		Percent possible points	
	(1) Unmediated	(2) Mediated	(3) Unmediated	(4) Mediated
<i>School-level variables</i>				
Economic disadvantage	-0.012*** (0.001)	-0.012*** (0.001)	-0.146*** (0.008)	-0.138*** (0.008)
Black	-0.019*** (0.001)	-0.015*** (0.001)	-0.207*** (0.012)	-0.169*** (0.012)
Hispanic	-0.008*** (0.001)	-0.008*** (0.001)	-0.076*** (0.014)	-0.075*** (0.014)
Asian or Pacific Islander	0.023*** (0.004)	0.022*** (0.004)	0.425*** (0.048)	0.414*** (0.046)
Indigenous	-0.027 (0.014)	-0.017 (0.013)	-0.093 (0.150)	0.025 (0.145)
2+ races	-0.023** (0.007)	-0.015* (0.007)	-0.189* (0.077)	-0.099 (0.074)
Students with Disabilities	-0.011*** (0.003)	-0.010*** (0.003)	-0.228*** (0.029)	-0.213*** (0.028)
English learners	-0.010*** (0.002)	-0.007*** (0.002)	-0.158*** (0.018)	-0.125*** (0.018)
<i>County-level variables</i>				
Unemployment Rate	-0.289*** (0.040)	-0.320*** (0.039)	-3.417*** (0.439)	-3.835*** (0.425)
SNAP Eligibility	0.019** (0.007)	0.028*** (0.007)	0.230** (0.077)	0.346*** (0.075)
Child poverty	-0.008 (0.009)	-0.006 (0.009)	-0.092 (0.098)	-0.106 (0.101)
Above Bachelor's	0.014** (0.004)	0.007 (0.005)	0.173*** (0.049)	0.065 (0.051)
Black	0.026*** (0.003)	0.025*** (0.003)	0.305*** (0.034)	0.299*** (0.034)
Hispanic	0.017*** (0.003)	0.013*** (0.003)	0.188*** (0.029)	0.154*** (0.029)
Indigenous	-0.645*** (0.184)	-0.627*** (0.179)	-8.126*** (2.008)	-7.918*** (1.936)

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	A-F grade		Percent possible points	
	(1) Unmediated	(2) Mediated	(3) Unmediated	(4) Mediated
Asian or Pacific Islander	-0.102*** (0.019)	-0.083*** (0.019)	-1.346*** (0.204)	-1.060*** (0.201)
2+ races	0.025 (0.028)	-0.057* (0.028)	0.104 (0.305)	-0.885** (0.305)
<i>Teacher quality mediators</i>				
% Out Field Teachers		-0.009*** (0.002)		-0.109*** (0.016)
% Teachers Rated Highly Effective		0.006*** (0.001)		0.076*** (0.006)
% Teachers Rated Unsatisfactory		-0.013 (0.011)		-0.035 (0.117)
Constant	5.081*** (0.348)	5.066*** (0.347)	84.755*** (3.802)	85.376*** (3.753)
N	2,971	2,971	2,971	2,971
R ²	0.522	0.548	0.581	0.611
Adjusted R ²	0.519	0.544	0.577	0.607

NOTE: Sample restricted to just those schools with teacher quality variables. All models include school-level fixed effects, a charter indicator, and locale fixed effects. A-F grade measured on a 0-4 GPA scale, percent-possible-points index measured on a 0-100 percentage scale. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$