

Study of the Educational Costs of Serving Students Who Are Economically Disadvantaged

Appendices

Jesse Levin, Christopher D. Brooks, Sana Fatima, Damon Blair,
Brad Salvato, Ajay Srikanth, Bryan London, Drew Atchison
American Institutes for Research

Alexander Jacobson, Lucy Hadley, Brianne Dotson,
Hope Harrington, Bersabell Yeshitla
WestEd

Bruce Baker
University of Miami

August 2025

Contents

Appendix A. Study Data Sources.....	3
Appendix B. Quantitative Analysis Variables and Data Sources.....	10
Data Sources and Corresponding Analyses.....	10
Additional Data Analysis Tables	12
Community-Based Organization Survey Contact List.....	46
Survey Respondents and Nonresponse Bias Analysis.....	48
Appendix C. Discrepancy Between MEPS and the Current Student Economic Disadvantage Measure	52
Appendix D. Additional Methodology Detail.....	53
Additional Methods Detail	53
Additional Data and Methods Exhibits	57
Project Survey Protocol.....	61
Additional Analysis Results	65
Appendix E. Workshop Documents	99
Introduction	99
PJP Activities.....	103
Electronic Files Used by PJPs.....	108
Resources and Services.....	109
Task Overview	110
Task 1: The Base Model.....	111
Task 2: Programs for High Poverty Schools.....	115
Task 3: Programs for Low Poverty Schools.....	117
Program Design Document	119
Appendix F. Panelist Recruitment Process and Panelist Biographies.....	134
Recruitment Process for the Professional Judgment Panels.....	134
Panelist Bios	135
Rural Typology Panel 1 Biographies	135
Rural Typology Panel 2 Biographies	138
Small Town Typology Panel 1 Biographies	140
Small Town Typology Panel 2 Biographies	143
Suburban Typology Panel 1 Biographies.....	146
Urban Typology Panel 1 Biographies	149
Urban Typology Panel 2 Biographies	153
Appendix G. Calculations for Options 1 and 2	156

Appendix A. Study Data Sources

Data element	Description	Source	Chapter 3 – Needs assessment	Chapter 4 – Cost Function	Chapter 5 – Current services	Chapter 6 – Professional judgment panel
Total School Enrollment	Total number of students enrolled in each Ohio school between the 2017–18 to 2022–23 school years.	Ohio Department of Education and Workforce (ODEW) Report Card (https://reportcard.education.ohio.gov/download)	✓	✓	✓	✓
Students with Disabilities Enrollment	Total number of students with disabilities enrolled in each Ohio school between the 2017–18 and 2022–23 school years.	Ohio Department of Education and Workforce (ODEW) Report Card (https://reportcard.education.ohio.gov/download)	✓	✓	✓	✓
English Learner Enrollment	Total number of English learner students enrolled in each Ohio school between the 2017–18 and 2022–23 school years.	Ohio Department of Education and Workforce (ODEW) Report Card (https://reportcard.education.ohio.gov/download)	✓	✓	✓	✓
Non-White Enrollment	Total number of non-White students enrolled in each Ohio school in the 2022–23 school year.	Ohio Department of Education and Workforce (ODEW) Report Card (https://reportcard.education.ohio.gov/download)	✓		✓	
Grade-Level Enrollments	Total number of students enrolled in each grade level between the 2017–18 and 2022–23 school years.	Ohio Department of Education and Workforce (ODEW) Report Card (https://reportcard.education.ohio.gov/download)		✓		✓
Students with Economic	Total number of students eligible for free- or reduced-price lunch in each Ohio school between the	Ohio Department of Education and Workforce (ODEW) Report Card	✓		✓	✓

Data element	Description	Source	Chapter 3 – Needs assessment	Chapter 4 – Cost Function	Chapter 5 – Current services	Chapter 6 – Professional judgment panel
Disadvantage Enrollment	2017–18 and 2022–23 school years.	https://reportcard.education.ohio.gov/download				
Modified Model Estimates of Poverty in Schools (MEPS)	Modified Model Estimates of Poverty in Schools (MEPS) is a measure developed by the Urban Institute that adjusts school-level estimates of poverty to align with geographic poverty rates measured by the Small Area Income and Poverty Estimates (SAIPE) program. MEPS data for Ohio schools were used for the years 2018 through 2022.	Urban Institute https://educationdata.urban.org/data-explorer/explorer		√		
Income-to-Poverty Ratio (IPR)	The Census Income-to-Poverty Ratio (IPR) measures predicted family income relative to the federal poverty threshold within the neighborhood surrounding a school. Yearly data between 2018 and 2021 were available and used at the time of analysis.	National Center for Education Statistics Education (NCES) Demographic and Geographic Estimates (EDGE)		√		
4-Year Graduation Rates	Yearly percentage of a school's seniors that graduated in 4 years between the 2017–18 and 2022–23 school years.	Ohio Department of Education and Workforce (ODEW) Report Card https://reportcard.education.ohio.gov/download		√		
Math Achievement	Yearly percentage of students in each grade level that are at or	Ohio Department of Education and Workforce (ODEW) Report Card	√	√		

Data element	Description	Source	Chapter 3 – Needs assessment	Chapter 4 – Cost Function	Chapter 5 – Current services	Chapter 6 – Professional judgment panel
	above proficient in standardized math examinations between the 2017–18 and 2022–23 school years.	https://reportcard.education.ohio.gov/download				
ELA Achievement	Yearly percentage of students in each grade level who are at or above proficient in standardized reading examinations between the 2017–18 and 2022–23 school years.	Ohio Department of Education and Workforce (ODEW) Report Card https://reportcard.education.ohio.gov/download	√	√		
Chronic Absenteeism	Yearly percentage of students who miss 10% or more of the school year between the 2017–18 and 2022–23 school years.	Ohio Department of Education and Workforce (ODEW) Report Card https://reportcard.education.ohio.gov/download		√		
Chronic Absenteeism for Students Who Are Economically Disadvantaged	Yearly percentage of students who miss 10% or more of the school year and are economically disadvantaged in the 2022–23 school year.	Ohio Department of Education and Workforce (ODEW) Report Card https://reportcard.education.ohio.gov/download	√			
Population Above the Age of 25 with Bachelor's or Advanced Degree	Number of the total population above the age of 25 in each zip code who held a bachelor's or advanced degree in 2020.	2020 Decennial Census		√		

Data element	Description	Source	Chapter 3 – Needs assessment	Chapter 4 – Cost Function	Chapter 5 – Current services	Chapter 6 – Professional judgment panel
Population by Age	Number of the total population in each zip code who were at or above the age of 65.	2020 Decennial Census		√		
Land Area by Zip Code	Total land area of a given zip code in 2020 (used in population density calculation).	2020 Decennial Census		√		
Population by Zip Code	Total population of a given zip code in 2020 (used in population density calculation).	2020 Decennial Census		√		
Zip Code	A school's zip code between the 2017–18 and 2022–23 school years.	National Center for Education Statistics (NCES) Common Core of Data (CCD) (https://nces.ed.gov/ccd/files.asp#Fiscal:2,LevelId:7,Page:1)		√		
District Locale	Indicator of district locale (urban, suburban, small town, rural/remote) in 2022–23 school year.	NCES CCD Public Elementary/Secondary School Universe Data, CCD Geographic Data	√		√	
Charter Status	A school's charter status between the 2017–18 and 2022–23 school years.	National Center for Education Statistics (NCES) Common Core of Data (CCD) (https://nces.ed.gov/ccd/files.asp#Fiscal:2,LevelId:7,Page:1)	√	√		
Community School Status	An indicator of community school status in the 2022–23 school year.	Ohio Department of Education and Workforce (ODEW) Report Card (https://reportcard.education.ohio.gov/download)	√			

Data element	Description	Source	Chapter 3 – Needs assessment	Chapter 4 – Cost Function	Chapter 5 – Current services	Chapter 6 – Professional judgment panel
CWIFT	The Comparative Wage Index for Teachers is a NCES-developed regional indicator which uses the American Community Survey (ACS) data to compare regional wage variations among nonteacher college graduates. Each LEA is assigned an index value. Data for 2017, 2019, and 2021 were available and used for this study.	National Center for Education Statistics (NCES) https://nces.ed.gov/programs/edge/economic/teacherwage	✓	✓		✓
School-Level Expenditures by Purpose	Total school expenditures for transportation, administrative services, pupil support, operations, instructional staff, instruction materials, food, general, and other for each school in Ohio between the 2017–18 and 2022–23 school years.	Data delivered upon request by Ohio Department of Education and Workforce (ODEW)	✓	✓		✓
School-Level State/Local School Expenditures	Total school expenditures from state/local sources for each school in Ohio between the 2021–22 and 2022–23 school years.	Ohio Department of Education and Workforce (ODEW) Report Card https://reportcard.education.ohio.gov/download		✓		✓

Data element	Description	Source	Chapter 3 – Needs assessment	Chapter 4 – Cost Function	Chapter 5 – Current services	Chapter 6 – Professional judgment panel
District-Level Expenditure by Purpose	Total district expenditures for transportation, administrative services, pupil support, operations, instructional staff, instruction materials, food, general, and other for each district in Ohio between the 2017–18 and 2022–23 school years.	Data delivered upon request by Ohio Department of Education and Workforce (ODEW)	√	√		√
District-Level Revenue by Source	Total district revenues by source for the 2017–18 and 2022–23 school years.	Data delivered upon request by Ohio Department of Education and Workforce (ODEW)				√
Staff Salaries	Annual salary earned by school employees in 2022–2023 fiscal year.	Data from the Ohio Education Management Information System (EMIS)				√
Pupil-Teacher Ratio	School-level ratio of pupils to teachers in 2022–23 school year.	Ohio Department of Education and Workforce (ODEW) Report Card (https://reportcard.education.ohio.gov/download)	√			
Percentage Inexperienced Teachers	School percentage of inexperienced teachers in the 2022–23 school year.	Ohio Department of Education and Workforce (ODEW) Report Card (https://reportcard.education.ohio.gov/download)	√			
State Support Team	Indicator of state support team region in 2022–23 school year.	Ohio Department of Education and Workforce (ODEW) Report Card	√		√	

Data element	Description	Source	Chapter 3 – Needs assessment	Chapter 4 – Cost Function	Chapter 5 – Current services	Chapter 6 – Professional judgment panel
		https://reportcard.education.ohio.gov/download				
Share of Respondents Reporting Across Service Categories	Share of respondents on ODEW Survey reporting for each service category.	Ohio Department of Education and Workforce (ODEW) Survey			√	
Share of Spending Reported Across Service Categories	Share of spending reported for each service category.	ODEW Survey			√	
Share of Respondents Reporting Across Service Categories	Share of respondents on Project Survey reporting for each service category.	Project Survey			√	
Personnel Role and Nonpersonnel Resource	Share of respondents reporting for each personnel role and nonpersonnel resource.	Project Survey			√	
Initiative Descriptions	Open-ended description of initiatives.	ODEW Survey			√	

Appendix B. Quantitative Analysis Variables and Data Sources

Data Sources and Corresponding Analyses

Exhibit B1. Data Sources by Associated Analysis

Data sources	Key variable	Resource analysis	Student outcomes analysis
ODEW Detailed Expenditure Data 2022/23	School-level; per-pupil spending	●	
ODEW Report Card, Building Teacher Information 2022/23	Number of teacher full-time equivalents (FTE); percentage of inexperienced teachers (i.e., teachers with 2 years of experience or less)	●	
ODEW Report Card, Building Disaggregated Economically Disadvantaged 2022/23	Percentage of students who are economically disadvantaged; grade-level proficiency rates among students who are economically disadvantaged in math and English language arts; 4-year graduation rates among students who are economically disadvantaged	●	●
ODEW Report Card, Building Details 2022/23	Chronic absenteeism rates among students who are economically disadvantaged; school enrollment; State Support Team region		●
ODEW Report Card, Building Disaggregated English Learner 2022/23	Percentage of English learners	●	●
ODEW Report Card, Building Disaggregated Disability 2022/23	Percentage of students with disabilities	●	●
ODEW Report Card, Building Disaggregated Race/Ethnicity 2022/23	Percentage of non-White students	●	●
NCES CCD Public Elementary/Secondary School Universe Data, School Directory	Schooling level, charter status	●	●
NCES Comparable Wage Index for Teachers (CWIFT) 2021	Local educational agency (LEA) CWIFT index	●	
NCES CCD Public Elementary/Secondary School Universe Data, CCD Geographic Data, 2022/23	School locale	●	●

Note. All Ohio Report Card data files can be retrieved at <https://reportcard.education.ohio.gov/download>. NCES Public Elementary/Secondary School Universe Data can be accessed at <https://nces.ed.gov/ccd/files.asp>, and NCES Comparable Wage Index for Teachers (CWIFT) can be accessed at <https://nces.ed.gov/programs/edge/economic/teacherwage>.

Additionally, an initial analysis revealed that average concentrations of students who are economically disadvantaged vary systematically by schooling level (Exhibit B2).^{1,2} Elementary schools tend to have higher percentages of students who are economically disadvantaged (54%) compared to middle (45%) and high schools (46%). These differences mean that elementary schools will tend to be overrepresented in the upper tertile group (top third) and underrepresented in the bottom tertile group (bottom third). In turn, this would bias comparisons of low-economic disadvantage and high-economic disadvantage school averages. With this in mind, we constructed tertiles *separately* for each schooling level, and presented findings by tertile for each schooling level individually.

Exhibit B2. School Counts and Average, Minimum, and Maximum Percentages of Students Who Are Economically Disadvantaged by Schooling Level and Tertile

Schooling level	Tertile	Number of schools	Average (%)	Median (%)	Standard deviation (%)	Minimum (%)	Maximum (%)
Elementary	Low-econ. dis.	524	21	21	10	1	38
	Mid-econ. dis.	523	53	50	12	38	90
	High-econ. dis.	523	100	100	1	90	100
	All Tertiles	1,570	54	46	33	1	100
Middle	Low-econ. dis.	209	18	18	8	2	32
	Mid-econ. dis.	209	41	40	5	32	51
	High-econ. dis.	209	80	83	20	51	100
	All Tertiles	627	45	39	29	2	100
High	Low-econ. dis.	265	17	17	7	1	29
	Mid-econ. dis.	265	38	37	7	29	52
	High-econ. dis.	265	90	100	17	53	100
	All Tertiles	795	46	34	32	1	100
All Schools	All Tertiles	2,992	50	41	32	1	100

Note. Econ. dis. = economic disadvantage. The exhibit displays enrollment-weighted averages of the school-level percentage of students who are economically disadvantaged by schooling level and poverty tertile. Source: Ohio Report Card, Building Disaggregated Economically Disadvantaged 2022/23; NCES Common Core of Data, Public Elementary/Secondary School Universe Data, CCD Geographic Data, 2022/23.

¹ Specifically, a multiple linear regression of the percentage of students who are economically disadvantaged on indicators of each of the three schooling levels suggests that elementary school has a statistically significantly higher average percentage compared to the other two levels ($p < .001$), and that this difference is greatest between elementary schools and middle schools (see Exhibit B3).

² Schooling level is generally defined by grade range such that elementary includes schools with any combination of grades kindergarten through Grade 5; middle school includes schools with any combination of Grade 6 through Grade 8, and high school includes schools with any combination of Grade 9 through Grade 12. Schools with grade ranges inconsistent with any of these three levels are relatively rare (<2%) and were assigned to one of the three main schooling levels according to a systematic procedure. The vast majority of these schools (79%) were recategorized as high schools.

Additional Data Analysis Tables

Exhibit B3. Percentage of Students Who Are Economically Disadvantaged and Schooling Level Regression Results

Variable	Percentage of students who are economically disadvantaged
Elementary School indicator	Omitted
Middle School indicator	-0.0950*** (0.0158)
High School indicator	-0.0839*** (0.0171)
Constant	0.543*** (0.00927)
Observations	2,992
Adjusted R-squared	0.018

Note. Table displays coefficients and standard errors from ordinary least squares regressions of the school-level percentage of students who are economically disadvantaged on the listed covariates. Standard errors are robust, and the regression is weighted by school enrollment. *** $p < .001$. Source: Study team analysis of data from the following sources: ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23, NCES CCD Public Elementary/Secondary School Universe Data – Geographic Data, 2022/23.

Exhibit B4. Descriptive Statistics for All Continuous Variables Included in the Regression Analyses – Elementary Schools

Variable	Count	Average	Median	Standard deviation	Minimum	Maximum
Per-Pupil Spending (\$)	1,570	16,086	15,157	4,015	4,951	30,626
Pupil-Teacher Ratio	1,569	15.6	15.4	3.2	4.7	47.3
Inexperienced Teachers (%)	1,569	11.8	8.3	12.5	0.0	100.0
Chronic Absenteeism Rate among Students who are Economically Disadvantaged (%)	1,558	29.9	26.7	14.5	0.0	87.9
Students who are Economically Disadvantaged (%)	1,570	58.4	50.1	33.3	0.7	100.0
LEA-level CWIFT	1,570	0.9	0.9	0.1	0.7	1.0
English Learners (%)	1,570	5.7	1.4	10.3	0.0	77.6
Students with Disabilities (%)	1,570	17.5	16.9	5.9	0.0	44.1
Non-White Students (%)	1,488	34.2	23.0	29.3	0.0	98.3
School Enrollment	1,570	429	395	200	40	3,045

Source: Study team analysis of data from the following sources: ODEW Detailed Expenditure Data 2022/23, ODEW Report Card - Building Teacher Information 2022/23; Building Disaggregated Economically Disadvantaged 2022/23; Building Details 2022/23, NCES CCD Public Elementary/Secondary School Universe Data – School Directory and Geographic Data, 2022/23; NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Exhibit B5. Descriptive Statistics for All Continuous Variables Included in the Regression Analyses – Middle Schools

Variable	Count	Average	Median	Standard deviation	Minimum	Maximum
Per-Pupil Spending (\$)	627	15,170	14,539	3,627	4,557	29,866
Pupil-Teacher Ratio	624	15.1	14.7	4.0	8.7	65.3
Inexperienced Teachers (%)	624	9.3	7.1	9.6	0.0	66.7
Chronic Absenteeism Rate among Students who are Economically Disadvantaged (%)	622	31.8	30.8	11.4	1.4	77.8
Students who are Economically Disadvantaged (%)	627	47.1	40.9	28.6	1.7	100.0
LEA-level CWIFT	627	0.9	0.9	0.1	0.7	1.0
English Learners (%)	627	2.3	0.7	4.3	0.0	31.8
Students with Disabilities (%)	627	16.0	15.7	4.5	1.7	32.7
Non-White Students (%)	622	24.1	14.6	23.2	0.6	96.8
School Enrollment	627	495	452	252	69	1,895

Source: Study team analysis of data from the following sources: ODEW Detailed Expenditure Data 2022/23, ODEW Report Card - Building Teacher Information 2022/23; Building Disaggregated Economically Disadvantaged 2022/23; Building Details 2022/23, NCES CCD Public Elementary/Secondary School Universe Data – School Directory and Geographic Data, 2022/23; NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Exhibit B6. Descriptive Statistics for All Continuous Variables Included in the Regression Analyses – High Schools

Variable	Count	Average	Median	Standard deviation	Minimum	Maximum
Per-Pupil Spending (\$)	795	16,587	15,682	4,108	5,758	31,904
Pupil-Teacher Ratio	794	15.0	14.4	4.9	4.5	87.0
Inexperienced Teachers (%)	794	11.4	7.8	13.5	0.0	100.0
Chronic Absenteeism Rate among Students who are Economically Disadvantaged (%)	791	43.7	40.5	18.6	0.0	100.0
Graduation Rate among Students who are Economically Disadvantaged (%)	702	84.1	88.9	17.0	2.5	97.5
Students who are Economically Disadvantaged (%)	795	49.7	37.6	32.7	1.2	100.0
LEA-level CWIFT	795	0.9	0.9	0.1	0.7	1.0
English Learners (%)	795	2.5	0.3	6.6	0.0	94.1
Students with Disabilities (%)	795	14.9	13.8	6.1	0.0	46.3
Non-White Students (%)	772	26.5	12.2	28.7	0.0	98.3
School Enrollment	795	598	430	475	31	3,281

Source: Study team analysis of data from the following sources: ODEW Detailed Expenditure Data 2022/23, ODEW Report Card - Building Teacher Information 2022/23; Building Disaggregated Economically Disadvantaged 2022/23; Building Details 2022/23, NCES CCD Public Elementary/Secondary School Universe Data – School Directory and Geographic Data, 2022/23; NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Exhibit B7. Descriptive Statistics for All Continuous Variables Included in the Regression Analyses – Grades 3, 5, 6, and 8

Variable	Count	Average	Median	Standard deviation	Minimum	Maximum
Grade 3 Math Proficiency Rate among Students who are Economically Disadvantaged (%)	1,303	50.1	51.6	21.6	2.5	97.5
Grade 3 ELA Proficiency Rate among Students who are Economically Disadvantaged (%)	1,306	51.8	52.2	19.3	2.5	97.5
Grade 5 Math Proficiency Rate among Students who are Economically Disadvantaged (%)	1,215	41.9	42.9	22.3	2.5	97.5
Grade 5 ELA Proficiency Rate among Students who are Economically Disadvantaged (%)	1,215	55.9	57.9	18.7	2.5	97.5
Grade 6 Math Proficiency Rate among Students who are Economically Disadvantaged (%)	965	35.7	35.2	19.6	2.5	97.5
Grade 6 ELA Proficiency Rate among Students who are Economically Disadvantaged (%)	964	41.9	42.6	17.8	2.5	94.1
Grade 8 Math Proficiency Rate among Students who are Economically Disadvantaged (%)	859	36.9	36.5	21.2	2.5	97.5
Grade 8 ELA Proficiency Rate among Students who are Economically Disadvantaged (%)	865	45.6	46.6	17.0	2.5	97.5

Source: Study team analysis of data from the following sources: ODEW Detailed Expenditure Data 2022/23, ODEW Report Card - Building Teacher Information 2022/23; Building Disaggregated Economically Disadvantaged 2022/23; Building Details 2022/23, NCES CCD Public Elementary/Secondary School Universe Data – School Directory and Geographic Data, 2022/23; NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Exhibit B8. Descriptive Data for All Categorical Variables Included in the Regression Analyses

Variable	Elementary schools		Middle schools		High schools	
	Count	Percentage	Count	Percentage	Count	Percentage
Community School	113	7.2	3.0	0.5	73.0	9.2
City Locale	385	24.5	53.0	8.5	152.0	19.1
Suburb Locale	638	40.6	265.0	42.3	233.0	29.3
Town Locale	184	11.7	98.0	15.6	116.0	14.6
Rural Locale	363	23.1	211.0	33.7	294.0	37.0
Region 1	160	10.2	50.0	8.0	90.0	11.3
Region 2	54	3.4	33.0	5.3	29.0	3.6
Region 3	148	9.4	36.0	5.7	70.0	8.8
Region 4	33	2.1	17.0	2.7	16.0	2.0
Region 5	81	5.2	45.0	7.2	58.0	7.3
Region 6	54	3.4	28.0	4.5	44.0	5.5
Region 7	69	4.4	32.0	5.1	46.0	5.8
Region 8	113	7.2	44.0	7.0	42.0	5.3
Region 9	67	4.3	32.0	5.1	35.0	4.4
Region 10	144	9.2	51.0	8.1	62.0	7.8
Region 11	281	17.9	115.0	18.3	104.0	13.1
Region 12	81	5.2	31.0	4.9	48.0	6.0
Region 13	193	12.3	60.0	9.6	76.0	9.6
Region 14	24	1.5	15.0	2.4	20.0	2.5
Region 15	28	1.8	22.0	3.5	30.0	3.8
Region 16	40	2.5	16.0	2.6	25.0	3.1

Source: Study team analysis of data from the following sources: ODEW Report Card - Building Disaggregated Economically Disadvantaged 2022/23; NCES CCD Public Elementary/Secondary School Universe Data – NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Exhibit B9. Average School-Level Per-Pupil Spending, Pupil Teacher Ratios, and Percentage of Inexperienced Teachers, by Tertile and Schooling Level, 2022/23

Schooling level	Tertile	Average per-pupil spending (\$)	Average pupil-teacher ratios	Average percentage of inexperienced teachers
Elementary School	High-econ. dis.	19,097***	15.0***	18.0***
	Mid-econ. dis.	14,910	15.5	9.2
	Low-econ. dis.	14,254	16.3	8.2
Middle School	High-econ. dis.	16,648***	14.4***	13.0***
	Mid-econ. dis.	14,418	15.2	8.7
	Low-econ. dis.	14,445	15.8	6.1
High School	High-econ. dis.	18,799***	15.6***	18.0***
	Mid-econ. dis.	15,720	14.2	9.0
	Low-econ. dis.	15,243	15.2	7.1
All Schools	All Tertiles	16,027	15.3	11.2

Note. Econ. dis. = economic disadvantage. n=2,992 total schools for per pupil expenditures, n=2,987 schools for the student teacher ratios, and inexperienced teacher data. Averages are unweighted. Asterisks indicate that the value for high-economic disadvantage schools is statistically significantly different than in low-economic disadvantage schools based on a two-tailed t-test: *** $p < .001$. Source: Study team analysis of data from the following sources: ODEW Detailed Expenditure Data 2022/23, ODEW Report Card - Building Teacher Information 2022/23; Building Disaggregated Economically Disadvantaged 2022/23; Building Details 2022/23, and NCES CCD Public Elementary/Secondary School Universe Data, School Directory.

In the longer memo that is a companion to this chapter, the research team reports on per-pupil expenditures as an additional measure of inputs. Because the Cost Function chapter already addresses a similar set of analyses, the examination of per-pupil expenditures is not included in the main chapter but is included here as a supplementary analysis. The research team’s primary measure of school-level per-pupil spending is defined as each school’s total operational expenditure divided by its total enrollment. A school’s expenditure reflects the direct monetary resources devoted to providing educational programs and services, and adjusting to a per-pupil amount allows for comparisons of schools of differing size. In the context of a needs assessment, our analysis of spending will assess the extent to which students who are economically disadvantaged experience programs implemented with a lower level of monetary investment as their non-economically disadvantaged peers, which may indicate an unmet need.

Exhibit B10. Difference In Average Per-Pupil Spending Between High-Economic Disadvantage and Low-Economic Disadvantage Schools, by Schooling Level

Schooling level	Per-pupil spending in dollars
Elementary school	4,843***
Middle school	2,203***
High school	3,555***

Note. $n = 2,992$ total schools for per pupil expenditures. Averages are unweighted. Asterisks indicate that the value for high-economic disadvantage schools is statistically significantly different than in low-economic disadvantage schools based on a two-tailed t -test: *** $p < .001$. Source: Study team analysis of data from the following sources: ODEW Detailed Expenditure Data 2022/23, Economically Disadvantaged 2022/23; Building Details 2022/23, and NCES CCD Public Elementary/Secondary School Universe Data, School Directory.

As illustrated, per-pupil spending is significantly higher for high-economic disadvantage schools compared to low-economic disadvantage schools in all schooling levels. Specifically, average per-pupil spending was between \$2,203 and \$4,843 per pupil higher in high-economic disadvantage schools compared to low-economic disadvantage schools, and statistically significant ($p < .001$) in all cases.

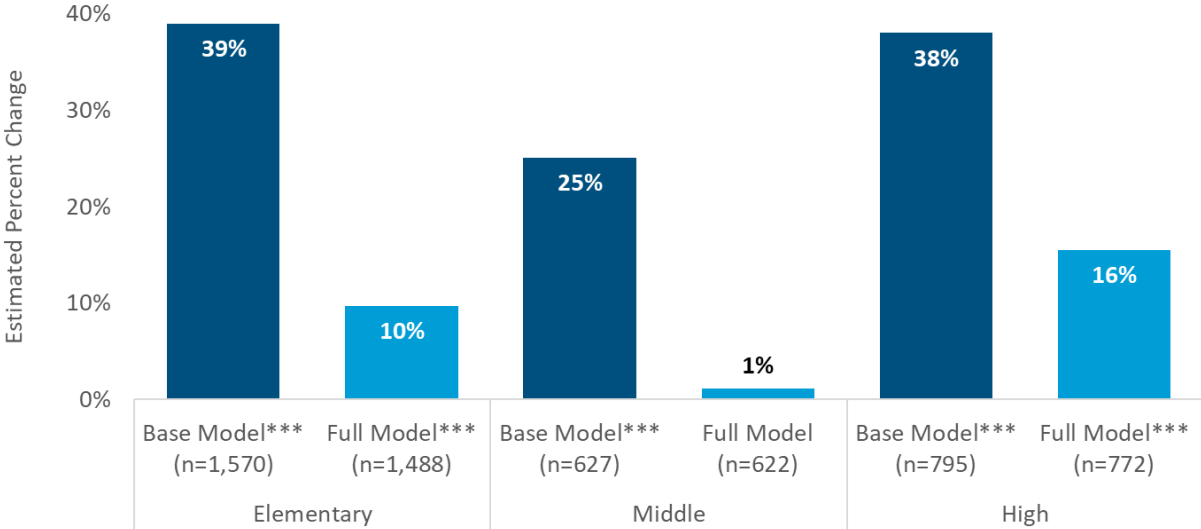
With respect to per-pupil spending, the first stage analysis results suggest spending is higher on average as the percentage of students who are economically disadvantaged increases. However, to test the robustness of this initial result, we used regression analysis to account for relevant factors.

As illustrated in Exhibit B11, our base model, which regresses per-pupil spending on the percentage of students who are economically disadvantaged with no other factors, suggests that schools with 100% students who are economically disadvantaged are predicted to spend between 25% and 39% more per pupil compared to schools with no students who are economically disadvantaged. This association is statistically significant for all schooling levels ($p < .001$). Once we account for the factors noted above, the magnitude of this relationship attenuates for both elementary and high schools to an additional 10% and 16%, respectively, and is no longer statistically significant for middle schools.

In summary, our analysis suggests that per-pupil spending increases as the percentage of students who are economically disadvantaged increases, though this association is only statistically significant for elementary and high schools and is smaller in magnitude after accounting for other relevant factors.

In fact, there are many reasons to expect that the level of resources invested will be greater as the population of students who are economically disadvantaged grows. For one, there are state and federal programs allocated solely or in part based on the size of this population, such as Ohio’s Disadvantaged Pupil Impact Aid, and the federal Title I, Part A program. Secondly, it is well-documented that students who are economically disadvantaged have distinct and often greater needs compared to their more advantaged peers, necessitating additional resources, which are typically reflected in spending (Duncombe & Yinger, 2004; Atchison et al., 2023).

Exhibit B11. Regression Analysis Results for Per-Pupil Spending, Base and Full Model Results



Note. Figure displays the predicted percent change in per-pupil spending from a school with 0% economically disadvantaged students to one with 100%. Standard errors are robust, and the regressions are weighted by school enrollment: *** $p < .001$. Source: Study team analysis of data from the following sources: ODEW Detailed Expenditure Data 2022/23; ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23, Building Details 2022/23, Building Disaggregated English Learner 2022/23, Building Disaggregated Disability 2022/23, and Building Disaggregated Race/Ethnicity 2022/23; NCES CCD Public Elementary/Secondary School Universe Data – School Directory and Geographic Data, 2022/23; NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Finally, it is important to note that this result does not necessarily indicate an absence of unmet needs regarding financial investments at any schooling level. In fact, a forthcoming analysis of the relationship between per-pupil spending and student outcomes will examine the degree to which additional investment is needed to adequately meet the needs of students who are economically disadvantaged.

Exhibit B12. School-Level Per-Pupil Spending Regression Results

Variable	Elementary school		Middle school		High school	
	Base	Full model	Base	Full model	Base	Full model
Economic Disadvantage						
Students who are Economically Disadvantaged (%)	1.390*** (0.0246)	1.097*** (0.0294)	1.251*** (0.0406)	1.011 (0.0443)	1.380*** (0.0369)	1.155*** (0.0443)
Geographic Region and Input Prices (Region 1 omitted)						
Region 2 indicator		0.970 (0.0270)		1.009 (0.0309)		0.967 (0.0388)
Region 3 indicator		1.209*** (0.0294)		1.273*** (0.0517)		1.134*** (0.0389)
Region 4 indicator		1.120*** (0.0294)		1.123** (0.0403)		1.043 (0.0633)
Region 5 indicator		0.996 (0.0254)		0.985 (0.0395)		0.972 (0.0300)
Region 6 indicator		0.964 (0.0190)		0.983 (0.0322)		0.971 (0.0278)
Region 7 indicator		0.995 (0.0242)		1.012 (0.0493)		1.001 (0.0270)
Region 8 indicator		1.062** (0.0212)		1.096* (0.0424)		1.028 (0.0340)
Region 9 indicator		0.917* (0.0309)		0.968 (0.0717)		0.929 (0.0537)

Variable	Elementary school		Middle school		High school	
	Base	Full model	Base	Full model	Base	Full model
Region 10 indicator		1.046** (0.0175)		1.020 (0.0308)		0.966 (0.0295)
Region 11 indicator		1.042 (0.0230)		1.037 (0.0314)		0.973 (0.0278)
Region 12 indicator		1.005 (0.0328)		0.946 (0.0349)		0.986 (0.0313)
Region 13 indicator		1.019 (0.0217)		0.965 (0.0349)		0.909** (0.0289)
Region 14 indicator		1.056* (0.0260)		1.022 (0.0390)		0.916* (0.0331)
Region 15 indicator		1.062* (0.0324)		0.972 (0.0548)		0.941 (0.0395)
Region 16 indicator		1.020 (0.0726)		1.064 (0.0752)		0.929 (0.0892)
District-level CWIFT		1.626** (0.285)		1.943** (0.491)		1.942*** (0.386)
Student Populations						
English Learners (%)		0.918 (0.0504)		0.679 (0.175)		0.749** (0.0803)
Students with Disabilities (%)		1.540*** (0.139)		2.254*** (0.510)		1.683** (0.282)
Non-White Students (%)		1.209*** (0.0412)		1.254*** (0.0814)		1.140* (0.0578)

Variable	Elementary school		Middle school		High school	
	Base	Full model	Base	Full model	Base	Full model
Other School Characteristics (city schools omitted)						
Suburban School indicator		0.856*** (0.0145)		0.864** (0.0430)		0.869*** (0.0277)
Town School indicator		0.858*** (0.0194)		0.867** (0.0462)		0.858*** (0.0317)
Rural School indicator		0.866*** (0.0186)		0.817*** (0.0430)		0.867*** (0.0331)
Community School indicator		0.758*** (0.0170)		0.598*** (0.0485)		0.624*** (0.0213)
School Enrollment (natural logarithm)		0.863*** (0.0134)		0.882*** (0.0146)		0.899*** (0.0126)
Constant	12,592.2*** (139.2)	22,328.9*** (3983.1)	13,234.2*** (224.9)	16,844.1*** (4047.9)	13,426.7*** (200.0)	17,315.5*** (3414.1)
Observations	1,570	1,488	627	622	795	772
Adjusted R-squared	0.215	0.536	0.081	0.358	0.206	0.489

Note. Table displays exponentiated coefficients from ordinary least squares regressions of the natural log of school-level per-pupil expenditures on the listed covariates estimated separately for each schooling level; elementary, middle, and high school. The coefficients should be interpreted as reflecting the estimated percent change in per-pupil spending associated with a one-unit change in a given covariate, except the constant which is reported in dollars per pupil. For example, in the base elementary model schools with 100% of their students identified as economically disadvantaged are predicted to have per-pupil spending 39% higher than schools with 0% students who are economically disadvantaged. Standard errors are robust, and the regression is weighted by school enrollment. * $p < .05$, ** $p < .01$, *** $p < .001$. Source: Study team analysis of data from the following sources: ODEW Detailed Expenditure Data 2022/23; ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23, Building Details 2022/23, Building Disaggregated English Learner 2022/23, Building Disaggregated Disability 2022/23, and Building Disaggregated Race/Ethnicity 2022/23; NCES CCD Public Elementary/Secondary School Universe Data – School Directory and Geographic Data, 2022/23; NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Exhibit B13. School Level Pupil-Teacher Ratio Regression Results

Variable	Elementary school		Middle school		High school	
	Base	Full model	Base	Full model	Base	Full model
Economic Disadvantage						
Students who are Economically Disadvantaged (%)	-1.671*** (0.234)	-0.537 (0.399)	-2.719*** (0.362)	-1.663** (0.591)	-1.158* (0.569)	-0.111 (0.849)
Geographic Region and Input Prices (Region 1 omitted)						
Region 2 indicator		0.837* (0.412)		0.276 (0.468)		0.304 (0.682)
Region 3 indicator		0.778* (0.359)		-0.671 (0.477)		0.0180 (0.585)
Region 4 indicator		0.351 (0.379)		-0.230 (0.572)		1.142 (0.778)
Region 5 indicator		-0.273 (0.366)		0.562 (0.765)		-0.788 (0.654)
Region 6 indicator		0.442 (0.488)		0.0666 (0.544)		-0.0686 (0.591)
Region 7 indicator		-0.181 (0.432)		-0.966 (0.830)		-1.140* (0.575)
Region 8 indicator		-0.129 (0.301)		-0.548 (0.506)		-0.874 (0.553)
Region 9 indicator		0.649 (0.405)		0.164 (0.639)		0.101 (0.733)
Region 10 indicator		0.252 (0.254)		0.771 (0.455)		0.288 (0.524)
Region 11 indicator		1.779*** (0.332)		1.436** (0.470)		1.012 (0.614)

Variable	Elementary school		Middle school		High school	
	Base	Full model	Base	Full model	Base	Full model
Region 12 indicator		0.0604 (0.371)		0.257 (0.574)		-0.504 (0.569)
Region 13 indicator		1.005** (0.351)		2.175*** (0.570)		1.724* (0.726)
Region 14 indicator		-0.584 (0.461)		1.483 (2.137)		-0.330 (0.598)
Region 15 indicator		-0.108 (0.582)		1.037 (0.892)		0.228 (0.975)
Region 16 indicator		-0.337 (0.557)		-0.478 (0.676)		-0.622 (0.592)
District-level CWIFT		-5.533* (2.704)		-12.01** (3.714)		-2.024 (3.555)
Student Populations						
English Learners (%)		0.473 (1.058)		1.802 (2.294)		1.533 (2.813)
Students with Disabilities (%)		-10.31*** (1.459)		-13.50*** (3.426)		-11.95** (3.851)
Non-White Students (%)		-0.805 (0.513)		-0.366 (0.776)		-1.300 (1.151)
Other School Characteristics (city schools omitted)						
Suburban School indicator		-0.749** (0.234)		-0.0791 (0.439)		-0.936 (0.515)
Town School indicator		-0.559 (0.300)		0.381 (0.502)		-0.265 (0.606)
Rural School indicator		-0.862** (0.293)		0.554 (0.472)		-0.765 (0.645)

Variable	Elementary school		Middle school		High school	
	Base	Full model	Base	Full model	Base	Full model
Community School indicator		-0.273 (0.719)		– (–)		4.785* (2.164)
School Enrollment (natural logarithm)		1.733*** (0.217)		0.864** (0.282)		1.516*** (0.358)
Constant	16.91*** (0.134)	12.51*** (2.734)	16.41*** (0.202)	22.46*** (3.539)	16.21*** (0.251)	9.574* (4.096)
Observations	1,569	1,488	624	619	794	771
Adjusted R-squared	0.036	0.196	0.061	0.161	0.009	0.210

Note. Table displays coefficients from ordinary least squares regressions of school-level pupil-teacher ratios on the listed covariates estimated separately for each schooling level; elementary, middle, and high school. Standard errors are robust, and the regression is weighted by school enrollment.

* $p < .05$, ** $p < .01$, *** $p < .001$. Source: Study team analysis of data from the following sources: ODEW Report Card – Building Teacher Information 2022/23, Building Disaggregated Economically Disadvantaged 2022/23, Building Details 2022/23, Building Disaggregated English Learner 2022/23, Building Disaggregated Disability 2022/23, and Building Disaggregated Race/Ethnicity 2022/23; NCES CCD Public Elementary/Secondary School Universe Data – School Directory and Geographic Data, 2022/23; NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Exhibit B14. School Level Percentage of Inexperienced Teachers Regression Results

Variable	Elementary school		Middle school		High school	
	Base	Full model	Base	Full model	Base	Full model
Economic Disadvantage						
Students who are Economically Disadvantaged (%)	0.108*** (0.00951)	0.0744*** (0.0143)	0.112*** (0.0154)	0.0734** (0.0258)	0.130*** (0.0139)	0.0762** (0.0232)
Geographic Region and Input Prices (Region 1 omitted)						
Region 2 indicator		-0.00567 (0.0128)		-0.00406 (0.0214)		-0.0206 (0.0166)
Region 3 indicator		-0.00203 (0.0109)		-0.00550 (0.0177)		-0.0328* (0.0167)
Region 4 indicator		-0.0201 (0.0110)		-0.0408** (0.0149)		-0.0183 (0.0178)
Region 5 indicator		-0.0219 (0.0127)		-0.0153 (0.0172)		-0.00771 (0.0163)
Region 6 indicator		0.00584 (0.0113)		-0.0153 (0.0156)		0.0102 (0.0152)
Region 7 indicator		0.0167 (0.0142)		0.0126 (0.0280)		0.0235 (0.0198)
Region 8 indicator		0.00614 (0.0113)		-0.00687 (0.0146)		0.0177 (0.0192)
Region 9 indicator		0.000989 (0.0124)		-0.0186 (0.0169)		-0.000689 (0.0199)
Region 10 indicator		0.0318*		0.00194		0.0387*

Variable	Elementary school		Middle school		High school	
	Base	Full model	Base	Full model	Base	Full model
		(0.0128)		(0.0161)		(0.0174)
Region 11 indicator		0.0652*** (0.0110)		0.0306 (0.0160)		0.0305 (0.0165)
Region 12 indicator		0.000993 (0.0116)		-0.0155 (0.0181)		-0.00664 (0.0154)
Region 13 indicator		0.0466*** (0.0124)		0.0231 (0.0188)		0.0207 (0.0184)
Region 14 indicator		0.0231 (0.0189)		0.0215 (0.0237)		0.0559* (0.0243)
Region 15 indicator		-0.000570 (0.0260)		-0.0187 (0.0264)		0.0286 (0.0343)
Region 16 indicator		-0.0241 (0.0149)		-0.0293 (0.0241)		-0.00879 (0.0191)
District-level CWIFT		-0.131 (0.0813)		-0.00880 (0.124)		0.0125 (0.113)
Student Populations						
English Learners (%)		0.0482 (0.0395)		0.0400 (0.135)		0.0849 (0.0732)
Students with Disabilities (%)		-0.0979 (0.0539)		0.158 (0.100)		-0.0607 (0.0877)
Non-White Students (%)		0.0193 (0.0208)		0.0383 (0.0330)		0.0362 (0.0316)

Variable	Elementary school		Middle school		High school	
	Base	Full model	Base	Full model	Base	Full model
Other School Characteristics (city schools omitted)						
Suburban School indicator		-0.00558 (0.0104)		-0.0429* (0.0188)		-0.00755 (0.0153)
Town School indicator		-0.00283 (0.0125)		-0.0267 (0.0223)		-0.0122 (0.0190)
Rural School indicator		0.00125 (0.0119)		-0.0262 (0.0226)		-0.0112 (0.0186)
Community School indicator		0.156*** (0.0278)		– (–)		0.0977** (0.0322)
School Enrollment (natural logarithm)		0.000885 (0.00596)		0.0103 (0.0113)		-0.0123 (0.00666)
Constant	0.0539*** (0.00442)	0.163 (0.0851)	0.0432*** (0.00624)	-0.00513 (0.124)	0.0426*** (0.00576)	0.123 (0.108)
Observations	1,569	1,488	624	619	794	771
Adjusted R-squared	0.102	0.218	0.127	0.204	0.157	0.239

Note. Table displays coefficients from ordinary least squares regressions of school-level percentage of inexperienced teachers on the listed covariates estimated separately for each schooling level; elementary, middle, and high school. Standard errors are robust, and the regression is weighted by school enrollment. * $p < .05$, ** $p < .01$, *** $p < .001$. Source: Study team analysis of data from the following sources: ODEW Report Card – Building Teacher Information 2022/23, Building Disaggregated Economically Disadvantaged 2022/23, Building Details 2022/23, Building Disaggregated English Learner 2022/23, Building Disaggregated Disability 2022/23, and Building Disaggregated Race/Ethnicity 2022/23; NCES CCD Public Elementary/Secondary School Universe Data – School Directory and Geographic Data, 2022/23; NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Comparing Outcomes for All Students and Students Who are Economically Disadvantaged

While this analysis focuses primarily on outcomes for students who are economically disadvantaged, it is first important to consider how outcomes for these students compare to all students. As illustrated in Exhibit B15, statewide outcomes for students who are economically disadvantaged are generally worse on average across all measures.

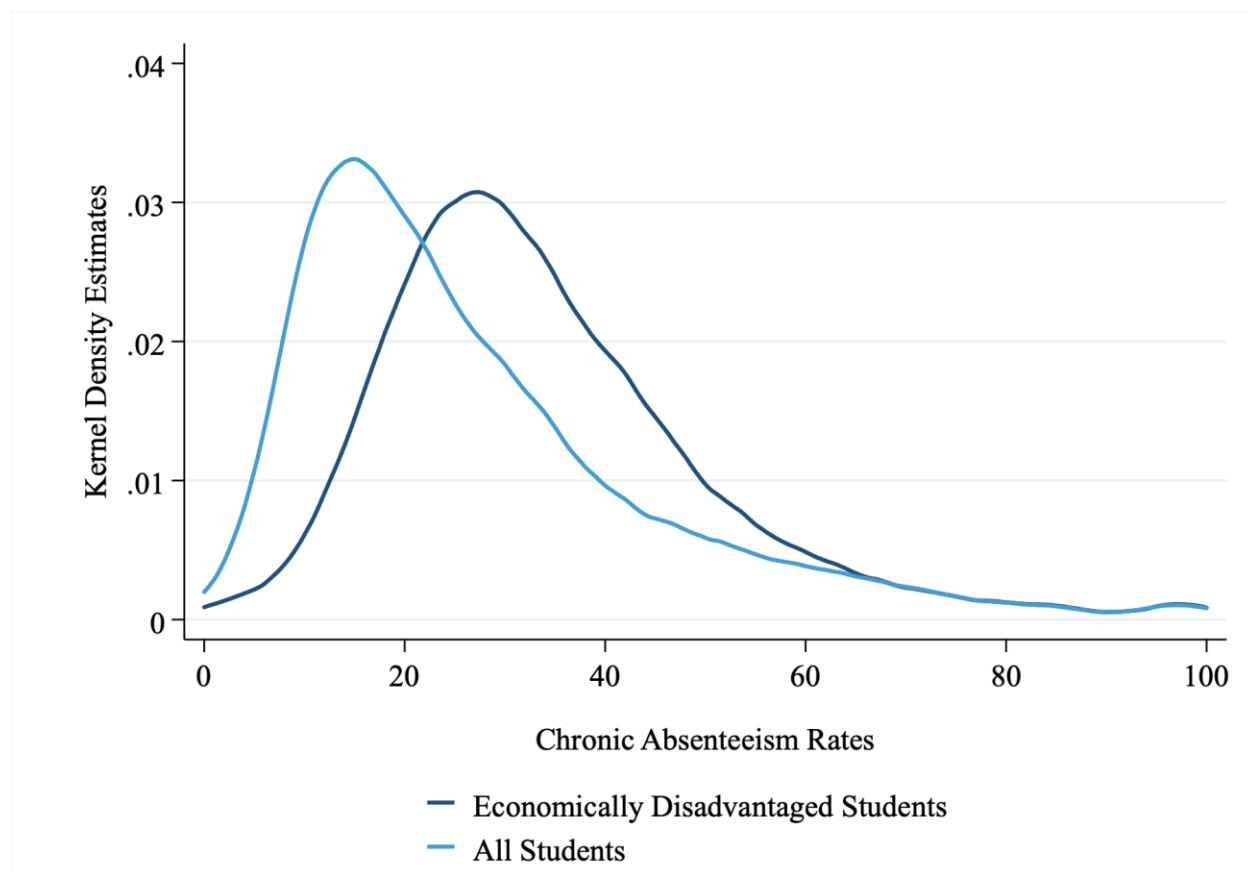
Exhibit B15. Statewide Average Student Outcomes for Students Who Are Economically Disadvantaged and All Students, 2022/23

Student outcome measure	Students who are economically disadvantaged (%)	All students (%)	Difference (percentage points)
Average Chronic Absenteeism Rates	34 (n = 2,971)	27 (n = 2,992)	7***
Graduation Rates	84 (n = 702)	88 (n = 786)	-4***
Grade 3 Proficiency Rates – ELA	52 (n = 1,306)	61 (n = 1,483)	-9***
Grade 3 Proficiency Rates – Math	50 (n = 1,303)	60 (n = 1,436)	-10***
Grade 5 Proficiency Rates – ELA	56 (n = 1,215)	64 (n = 1,329)	-8***
Grade 5 Proficiency Rates – Math	42 (n = 1,215)	53 (n = 1,338)	-11***
Grade 6 Proficiency Rates – ELA	42 (n = 964)	51 (n = 1,038)	-9***
Grade 6 Proficiency Rates – Math	36 (n = 965)	47 (n = 1,064)	-12***
Grade 8 Proficiency Rates – ELA	46 (n = 865)	55 (n = 911)	-9***
Grade 8 Proficiency Rates – Math	37 (n = 859)	45 (n = 916)	-8***

Note. Averages are unweighted averages. Asterisks indicate that the associated difference is statistically significant based upon a two-tailed t-test: *** $p < .001$. Source: Data are from the study team’s analysis based on ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23 and Building Details 2022/23; NCES CCD Public Elementary/Secondary School Universe Data – School Directory.

To start, the average chronic absenteeism rate for students who are economically disadvantaged is about 7 percentage points higher than for all students, a statistically significant difference ($p < .001$). Exhibit B16, which displays the distribution of school-level rates for each group, illustrates this difference showing that rates for students who are economically disadvantaged are clustered at higher rates than all students (ODEW Report Card, Building Disaggregated Economically Disadvantaged 2022–23).

Exhibit B16. Distribution of Chronic Absenteeism Rates for Students Who Are Economically Disadvantaged and All Students, 2022/23



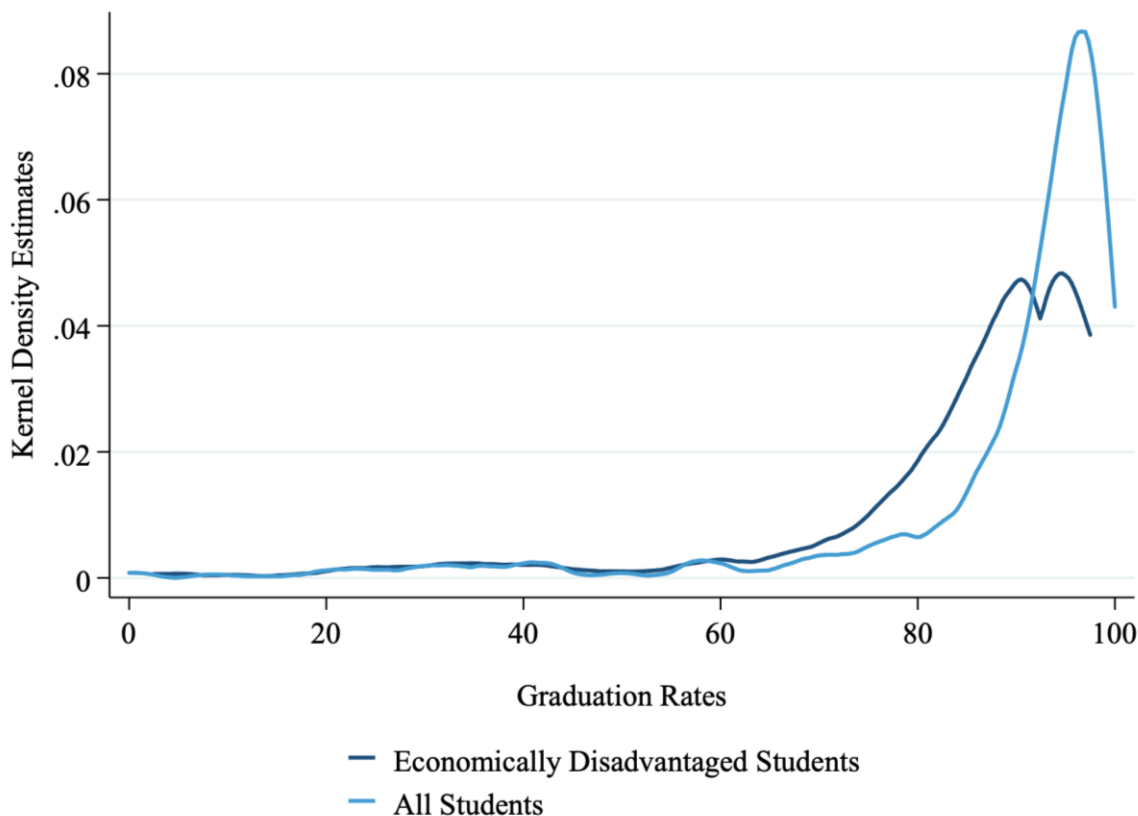
Note. $n = 2,971$ total schools. Figure plots kernel density estimates, an approach to smoothing a probability density function and a common way of displaying the distribution of a measure. In general, the height of the line, or the kernel density estimate, represents the relative likelihood that any given value of a measure will be at or around a particular point within the range of possible values. This figure illustrates, therefore, that chronic absenteeism rates for students who are economically disadvantaged are likely to be higher than the rates for all students. Source: ODEW Report Card – Building Details 2022/23.

Exhibit B17 shows that students who are economically disadvantaged also have more varied and generally worse graduation outcomes in Ohio. Specifically, the average school-level graduation rate among students who are economically disadvantaged in Ohio is about 4

percentage points below the average for all students, a statistically significant difference ($p < .001$). Moreover, the interquartile range, or the range between the 25th and 75th percentiles, for graduation rates among students who are economically disadvantaged is much wider: 12.5 percentage points compared to 8.7 percentage points for all students (ODEW Report Card, Building Disaggregated Economically Disadvantaged 2022–23).

Note that the wider range in graduation rates among students who are economically disadvantaged suggests greater variability within this group, potentially indicating more systemic challenges. In contrast, graduation rates among all students are less varied and more tightly clustered at the high end of the distribution, and relatively low rates (i.e., below around 80%) are much less common.

Exhibit B17. Distribution of Graduation Rates for Students Who Are Economically Disadvantaged and All Students, 2022/23



Note. $n = 702$ total schools. Figure plots kernel density estimates, an approach to smoothing a probability density function and a common way of displaying the distribution of a measure. In general, the height of the line, or the kernel density estimate, represents the relative likelihood that any given value of a measure will be at or around a particular point within the range of possible values. This figure illustrates, therefore, that graduation rates for students who are economically disadvantaged are likely to be slightly lower and more varied than the rates for all students. Source: ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23.

Finally, as with chronic absenteeism rates and graduation rates, proficiency rates are lower for students who are economically disadvantaged in Ohio compared to their more advantaged peers. Specifically, in the key identified grades—Grades 3, 5, 6, and 8—school-level proficiency rates for ELA and mathematics among students who are economically disadvantaged are between 8 and 12 percentage points lower than their peers, and statistically significant for all grades and subjects ($p < .001$) (ODEW Report Card, Building Disaggregated Economically Disadvantaged 2022–23).

The analysis clearly shows that outcomes for students who are economically disadvantaged are relatively worse compared to all students. The following sections explore whether outcomes for students who are economically disadvantaged vary systematically across schools with different concentrations of this population for each outcome measure.

Exhibit B18. Average Chronic Absenteeism and Graduation Rate Among Students Who Are Economically Disadvantaged, by Tertile and Schooling Level, 2022/23

Schooling level	Tertile	Average chronic absenteeism rate (%)	Average graduation rate (%)
Elementary School	High-econ. dis.	41.9***	N/A
	Mid-econ. dis.	26.6	N/A
	Low-econ. dis.	20.9	N/A
Middle School	High-econ. dis.	38.7***	N/A
	Mid-econ. dis.	30.1	N/A
	Low-econ. dis.	26.7	N/A
High School	High-econ. dis.	57.0***	76.0***
	Mid-econ. dis.	40.1	87.6
	Low-econ. dis.	33.9	90.6
All Schools	All Tertiles	34.0	84.2

Note. Econ. dis. = economic disadvantage. n= 2,971 schools for the chronic absenteeism analysis and n=702 schools (all high schools with available data) for the graduation rate. Averages are unweighted averages. Asterisks indicate that the value for high-economic disadvantage schools is statistically significantly different than in low-economic disadvantage schools based on a two-tailed t-test: *** $p < .001$. Source: Study team analysis of data from the following sources: ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23, and Building Details 2022/23; NCES CCD Public Elementary/Secondary School Universe Data – School Directory

Exhibit B19. Average Proficiency Rates Among Students Who Are Economically Disadvantaged, by Tertile for Selected Grades, 2022/23

Grade	Tertile	Average math proficiency rate (%)	Average reading proficiency rate (%)
Grade 3 <i>n</i> (math)=1,303 <i>n</i> (ELA)=1,306	High-econ. dis.	38.0***	41.3***
	Mid-econ. dis.	51.1	51.8
	Low-econ. dis.	61.1	62.3
	All Tertiles	50.1	51.8
Grade 5 <i>n</i> (math)=1,215 <i>n</i> (ELA)=1,215	High-econ. dis.	28.3***	44.1***
	Mid-econ. dis.	42.0	56.4
	Low-econ. dis.	55.4	67.1
	All Tertiles	41.9	55.9
Grade 6 <i>n</i> (math)=965 <i>n</i> (ELA) =964	High-econ. dis.	22.9***	30.3***
	Mid-econ. dis.	36.2	42.1
	Low-econ. dis.	47.8	53.1
	All Tertiles	35.7	41.9
Grade 8 <i>n</i> (math)=859 <i>n</i> (ELA) =865	High-econ. dis.	22.9***	35.4***
	Mid-econ. dis.	37.5	45.6
	Low-econ. dis.	50.4	55.7
	All Tertiles	36.9	45.6

Note. Econ. dis. = economic disadvantage. N-size varied by subject and grade, see table for specific counts. Averages are unweighted averages. Asterisks indicate that the value for high-economic disadvantage schools is statistically significantly different than in low-economic disadvantage schools based on a two-tailed t-test: *** $p < .001$. Source: Study team’s analysis based on ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23.

Exhibit B20. School Level Rates of Chronic Absenteeism Regression Results

Variables	Elementary school		Middle school		High school	
	Base	Full model	Base	Full model	Base	Full model
Economic Disadvantage						
Students who are Economically Disadvantaged (%)	0.238*** (0.00962)	0.1000*** (0.0144)	0.188*** (0.0163)	0.125*** (0.0237)	0.270*** (0.0192)	0.0790* (0.0306)
Geographic Region and Input Prices (Region 1 omitted)						
Region 2 indicator		0.0687*** (0.0141)		0.0281 (0.0205)		0.0563** (0.0215)
Region 3 indicator		0.0363** (0.0122)		0.00908 (0.0216)		0.0612** (0.0228)
Region 4 indicator		0.0750*** (0.0137)		0.0595** (0.0190)		0.0898** (0.0326)
Region 5 indicator		0.111*** (0.0117)		0.0400 (0.0220)		0.106*** (0.0229)
Region 6 indicator		-0.00729 (0.0117)		-0.0210 (0.0211)		-0.000600 (0.0192)
Region 7 indicator		0.00661 (0.0126)		-0.0263 (0.0196)		0.0161 (0.0209)
Region 8 indicator		0.0466*** (0.0102)		0.0231 (0.0190)		0.0852*** (0.0205)
Region 9 indicator		-0.0151 (0.0109)		-0.0352 (0.0190)		0.0307 (0.0252)
Region 10 indicator		0.0302** (0.00966)		0.00505 (0.0181)		0.0429* (0.0217)

Variables	Elementary school		Middle school		High school	
	Base	Full model	Base	Full model	Base	Full model
Region 11 indicator		0.0306** (0.0112)		-0.00227 (0.0186)		0.0584** (0.0205)
Region 12 indicator		0.0281 (0.0164)		-0.0108 (0.0322)		0.0390 (0.0267)
Region 13 indicator		0.0407*** (0.0120)		0.0567* (0.0223)		0.0797** (0.0246)
Region 14 indicator		0.0693*** (0.0164)		0.0452 (0.0256)		0.0445 (0.0271)
Region 15 indicator		0.0545*** (0.0152)		0.00497 (0.0237)		0.00759 (0.0334)
Region 16 indicator		0.0425* (0.0172)		-0.0150 (0.0367)		0.0424 (0.0304)
District-level CWIFT		0.181* (0.0908)		0.0892 (0.166)		0.230 (0.157)
Student Populations						
English Learners (%)		-0.176*** (0.0384)		-0.168 (0.142)		0.131 (0.0995)
Students with Disabilities (%)		0.366*** (0.0554)		0.549*** (0.131)		0.892*** (0.137)
Non-White Students (%)		0.124*** (0.0190)		0.0419 (0.0328)		0.0603 (0.0391)
Other School Characteristics (city schools omitted)						
Suburban School indicator		-0.0501*** (0.00966)		-0.0488 (0.0254)		-0.0380 (0.0206)

Variables	Elementary school		Middle school		High school	
	Base	Full model	Base	Full model	Base	Full model
Town School indicator		-0.0405*** (0.0119)		-0.0330 (0.0289)		-0.0154 (0.0244)
Rural School indicator		-0.0434*** (0.0116)		-0.0441 (0.0277)		-0.0415 (0.0248)
Community School indicator		0.0979*** (0.0175)		0.134*** (0.0267)		0.0701 (0.0465)
School Enrollment (natural logarithm)		0.00212 (0.00657)		0.0175 (0.0116)		-0.00747 (0.00922)
Constant	0.157*** (0.00520)	-0.0400 (0.0893)	0.237*** (0.00765)	0.0118 (0.139)	0.308*** (0.00856)	0.0622 (0.147)
Observations	1,558	1,476	622	617	791	768
Adjusted R-squared	0.362	0.511	0.246	0.340	0.313	0.474

Note. Table displays coefficients from ordinary least squares regressions of school-level chronic absenteeism rates among students who are economically disadvantaged on the listed covariates estimated separately for each schooling level; elementary, middle, and high school. Standard errors are robust, and the regression is weighted by school enrollment. * $p < .05$, ** $p < .01$, *** $p < .001$. Source: Study team analysis of data from the following sources: ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23, Building Details 2022/23, Building Disaggregated English Learner 2022/23, Building Disaggregated Disability 2022/23, and Building Disaggregated Race/Ethnicity 2022/23; NCES CCD Public Elementary/Secondary School Universe Data – School Directory and Geographic Data, 2022/23; NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Exhibit B21. School Level Graduation Rate Regression Results

Variable	High school	
	Base	Full model
Economic Disadvantage		
Students who are Economically Disadvantaged (%)	-0.131*** (0.0167)	0.00448 (0.0252)
Geographic Region and Input Prices (Region 1 omitted)		
Region 2 indicator		-0.0305 (0.0202)
Region 3 indicator		-0.0107 (0.0213)
Region 4 indicator		-0.00131 (0.0212)
Region 5 indicator		0.0258 (0.0185)
Region 6 indicator		-0.000804 (0.0220)
Region 7 indicator		0.0187 (0.0192)
Region 8 indicator		0.0336 (0.0179)
Region 9 indicator		0.00996 (0.0173)
Region 10 indicator		-0.0263 (0.0252)
Region 11 indicator		0.0141 (0.0181)
Region 12 indicator		0.0223 (0.0260)
Region 13 indicator		0.00748 (0.0213)
Region 14 indicator		0.00346 (0.0255)
Region 15 indicator		0.0683** (0.0250)

Variable	High school	
	Base	Full model
Region 16 indicator		0.00135 (0.0257)
District-level CWIFT		-0.0282 (0.126)
Student Populations		
English Learners (%)		-0.360*** (0.0699)
Students with Disabilities (%)		-0.646*** (0.118)
Non-White Students (%)		0.0610 (0.0324)
Other School Characteristics (city schools omitted)		
Suburban School indicator		0.0427** (0.0151)
Town School indicator		0.0167 (0.0191)
Rural School indicator		0.0546** (0.0194)
Community School indicator		-0.181** (0.0565)
School Enrollment (natural logarithm)		0.0142 (0.00965)
Constant	0.927*** (0.00691)	0.847*** (0.133)
Observations	702	679
Adjusted R-squared	0.115	0.280

Note. Table displays coefficients from ordinary least squares regressions of school-level graduation rates among students who are economically disadvantaged on the listed covariates estimated for high schools only. Standard errors are robust, and the regression is weighted by school enrollment. ** $p < .01$, *** $p < .001$. Source: Study team analysis of data from the following sources: ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23, Building Details 2022/23, Building Disaggregated English Learner 2022/23, Building Disaggregated Disability 2022/23, and Building Disaggregated Race/Ethnicity 2022/23; NCES CCD Public Elementary/Secondary School Universe Data – School Directory and Geographic Data, 2022/23; NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Exhibit B22. School Level Rates of English Language Arts Proficiency Regression Results

Variable	Grade 3		Grade 5		Grade 6		Grade 8	
	Base	Full model	Base	Full model	Base	Full model	Base	Full model
Economic Disadvantage								
Students who are Economically Disadvantaged (%)	-0.275*** (0.0156)	-0.0811** (0.0248)	-0.293*** (0.0148)	-0.0549* (0.0238)	-0.298*** (0.0155)	-0.104*** (0.0280)	-0.280*** (0.0184)	-0.0846** (0.0310)
Geographic Region and Input Prices (Region 1 omitted)								
Region 2 indicator		-0.0562 (0.0299)		-0.0409 (0.0219)		-0.0129 (0.0221)		-0.0158 (0.0228)
Region 3 indicator		0.0359 (0.0237)		-0.0000251 (0.0224)		0.0472 (0.0247)		0.0693** (0.0252)
Region 4 indicator		-0.0817** (0.0312)		0.0243 (0.0298)		-0.0189 (0.0329)		0.0379 (0.0365)
Region 5 indicator		0.0195 (0.0246)		-0.00458 (0.0221)		0.0153 (0.0247)		0.0669** (0.0250)
Region 6 indicator		-0.0311 (0.0287)		0.00137 (0.0224)		0.0226 (0.0238)		0.0521* (0.0231)
Region 7 indicator		-0.0259 (0.0264)		0.00564 (0.0259)		-0.0114 (0.0244)		0.0441 (0.0263)
Region 8 indicator		-0.000955 (0.0218)		-0.0122 (0.0204)		-0.000625 (0.0224)		0.0445 (0.0229)
Region 9 indicator		-0.00745 (0.0250)		0.000551 (0.0219)		-0.0278 (0.0221)		0.0434 (0.0255)
Region 10 indicator		-0.0166 (0.0198)		-0.0258 (0.0196)		-0.0143 (0.0188)		0.0179 (0.0222)

Variable	Grade 3		Grade 5		Grade 6		Grade 8	
	Base	Full model	Base	Full model	Base	Full model	Base	Full model
Region 11 indicator		0.0234 (0.0203)		0.0171 (0.0189)		0.0358 (0.0205)		0.0556** (0.0205)
Region 12 indicator		0.0359 (0.0290)		0.0239 (0.0255)		0.0194 (0.0291)		0.0713** (0.0263)
Region 13 indicator		0.0272 (0.0230)		0.0145 (0.0208)		0.0514* (0.0238)		0.00971 (0.0256)
Region 14 indicator		0.00912 (0.0295)		0.0126 (0.0306)		0.0233 (0.0254)		0.0254 (0.0313)
Region 15 indicator		0.00982 (0.0345)		-0.00574 (0.0259)		0.0487 (0.0262)		0.0965** (0.0310)
Region 16 indicator		0.0407 (0.0322)		-0.00295 (0.0347)		0.0142 (0.0310)		0.0318 (0.0443)
District-level CWIFT		-0.148 (0.168)		-0.0557 (0.162)		-0.241 (0.197)		0.192 (0.163)
Student Populations								
English Learners (%)		-0.193** (0.0586)		-0.0356 (0.0516)		-0.140* (0.0582)		-0.264** (0.0932)
Students with Disabilities (%)		-0.528*** (0.0935)		-0.601*** (0.0930)		-0.588*** (0.108)		-0.964*** (0.141)
Non-White Students (%)		-0.251*** (0.0323)		-0.282*** (0.0311)		-0.201*** (0.0324)		-0.167*** (0.0346)
Other School Characteristics (city schools omitted)								
Suburban School indicator		0.0182		0.0264		0.0121		-0.00630

Variable	Grade 3		Grade 5		Grade 6		Grade 8	
	Base	Full model	Base	Full model	Base	Full model	Base	Full model
		(0.0149)		(0.0150)		(0.0171)		(0.0241)
Town School indicator		-0.0212		-0.0257		-0.0419		-0.0511*
		(0.0206)		(0.0204)		(0.0227)		(0.0251)
Rural School indicator		-0.0249		-0.0114		-0.0175		-0.0287
		(0.0205)		(0.0198)		(0.0220)		(0.0251)
Community School indicator		0.0439		0.0489*		0.0435		0.0512*
		(0.0239)		(0.0242)		(0.0256)		(0.0228)
School Enrollment (natural logarithm)		-0.00262		0.00467		0.0215*		-0.00452
		(0.0127)		(0.0102)		(0.0109)		(0.0123)
Constant	0.696***	0.920***	0.750***	0.836***	0.611***	0.743***	0.621***	0.575***
	(0.0102)	(0.172)	(0.00874)	(0.159)	(0.00959)	(0.179)	(0.0115)	(0.158)
Observations	1,306	1,226	1,215	1,138	964	897	865	810
Adjusted R-squared	0.230	0.344	0.289	0.396	0.334	0.405	0.306	0.440

Note. Table displays coefficients are from ordinary least squares regressions of school-level ELA proficiency rates by grade among students who are economically disadvantaged on the listed covariates estimated separately for each schooling level; elementary, middle, and high school. Standard errors are robust, and the regression is weighted by school enrollment. * $p < .05$, ** $p < .01$, *** $p < .001$. Source: Study team analysis of data from the following sources: ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23, Building Details 2022/23, Building Disaggregated English Learner 2022/23, Building Disaggregated Disability 2022/23, and Building Disaggregated Race/Ethnicity 2022/23; NCES CCD Public Elementary/Secondary School Universe Data – School Directory and Geographic Data, 2022/23; NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Exhibit B23. School Level Rates of Mathematics Proficiency Regression Results

Variable	Grade 3		Grade 5		Grade 6		Grade 8	
	Base	Full model	Base	Full model	Base	Full model	Base	Full model
Economic Disadvantage								
Students who are Economically Disadvantaged (%)	-0.304*** (0.0169)	-0.0812** (0.0280)	-0.351*** (0.0184)	-0.0749* (0.0292)	-0.335*** (0.0163)	-0.0886** (0.0276)	-0.364*** (0.0212)	-0.124** (0.0378)
Geographic Region and Input Prices (Region 1 omitted)								
Region 2 indicator		-0.0493 (0.0360)		-0.0384 (0.0278)		-0.0635* (0.0299)		-0.0529 (0.0299)
Region 3 indicator		0.0244 (0.0260)		0.0172 (0.0270)		0.00272 (0.0255)		0.0749* (0.0344)
Region 4 indicator		-0.0505 (0.0289)		-0.00430 (0.0416)		-0.0808 (0.0419)		-0.0719 (0.0477)
Region 5 indicator		0.0217 (0.0270)		0.0563* (0.0276)		0.0233 (0.0289)		-0.0133 (0.0354)
Region 6 indicator		-0.0297 (0.0307)		0.0275 (0.0374)		0.0418 (0.0276)		0.0314 (0.0328)
Region 7 indicator		-0.0544* (0.0274)		-0.0204 (0.0271)		-0.0108 (0.0271)		0.0152 (0.0330)
Region 8 indicator		-0.0464* (0.0233)		-0.0242 (0.0251)		-0.00421 (0.0217)		-0.000421 (0.0288)
Region 9 indicator		-0.0121 (0.0255)		0.0524 (0.0278)		-0.0364 (0.0247)		0.00513 (0.0342)
Region 10 indicator		-0.0512* (0.0213)		-0.0306 (0.0231)		-0.0416* (0.0208)		-0.0361 (0.0279)
Region 11 indicator		-0.0421		-0.00297		-0.00527		0.0261

Variable	Grade 3		Grade 5		Grade 6		Grade 8	
	Base	Full model	Base	Full model	Base	Full model	Base	Full model
		(0.0222)		(0.0231)		(0.0233)		(0.0272)
Region 12 indicator		0.00433		0.0482		0.0397		-0.0449
		(0.0291)		(0.0333)		(0.0350)		(0.0409)
Region 13 indicator		0.0128		0.0259		0.0185		0.0192
		(0.0251)		(0.0257)		(0.0257)		(0.0329)
Region 14 indicator		0.0448		0.0445		0.00459		-0.0313
		(0.0365)		(0.0361)		(0.0302)		(0.0399)
Region 15 indicator		0.0146		-0.00753		-0.0339		0.0239
		(0.0371)		(0.0441)		(0.0374)		(0.0398)
Region 16 indicator		-0.0107		-0.0280		-0.0276		-0.0370
		(0.0403)		(0.0425)		(0.0361)		(0.0521)
District-level CWIFT		-0.154		-0.0724		0.110		-0.145
		(0.182)		(0.204)		(0.212)		(0.248)
Student Populations								
English Learners (%)		-0.00214		0.0704		0.0570		-0.0820
		(0.0624)		(0.0610)		(0.0642)		(0.114)
Students with Disabilities (%)		-0.390***		-0.386***		-0.406***		-0.923***
		(0.102)		(0.107)		(0.109)		(0.164)
Non-White Students (%)		-0.287***		-0.362***		-0.318***		-0.237***
		(0.0354)		(0.0356)		(0.0331)		(0.0439)
Other School Characteristics (city schools omitted)								
Suburban School indicator		0.0401*		0.0190		0.0219		0.00449
		(0.0177)		(0.0175)		(0.0170)		(0.0309)
Town School indicator		-0.0141		-0.0209		-0.0174		-0.0265
		(0.0231)		(0.0251)		(0.0243)		(0.0350)

Variable	Grade 3		Grade 5		Grade 6		Grade 8	
	Base	Full model	Base	Full model	Base	Full model	Base	Full model
Rural School indicator		0.0218 (0.0232)		-0.00876 (0.0250)		-0.0251 (0.0239)		0.000135 (0.0340)
Community School indicator		0.0565 (0.0296)		-0.0176 (0.0268)		0.000759 (0.0259)		0.0223 (0.0348)
School Enrollment (natural logarithm)		0.0110 (0.0137)		0.0304* (0.0132)		0.0157 (0.0120)		-0.0137 (0.0164)
Constant	0.698*** (0.0107)	0.807*** (0.190)	0.651*** (0.0120)	0.556** (0.200)	0.570*** (0.0106)	0.422* (0.190)	0.580*** (0.0142)	0.898*** (0.227)
Observations	1,303	1,224	1,215	1,138	965	898	859	804
Adjusted R-squared	0.227	0.349	0.281	0.408	0.347	0.440	0.330	0.410

Note. Table displays coefficients are from ordinary least squares regressions of school-level Mathematics proficiency rates by grade among students who are economically disadvantaged on the listed covariates estimated separately for each schooling level; elementary, middle, and high school. Standard errors are robust, and the regression is weighted by school enrollment. * $p < .05$, ** $p < .01$, *** $p < .001$. Source: Study team analysis of data from the following sources: ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23, Building Details 2022/23, Building Disaggregated English Learner 2022/23, Building Disaggregated Disability 2022/23, and Building Disaggregated Race/Ethnicity 2022/23; NCES CCD Public Elementary/Secondary School Universe Data – School Directory and Geographic Data, 2022/23; NCES Comparable Wage Index for Teachers (CWIFT) 2021.

Community-Based Organization Survey Contact List

Exhibit B24. List of Community-Based Organizations Contacted for Survey Participation

Organization name	Region	County
Columbus Springs East Hospital	Central	Franklin
Communities in Schools	Central	Franklin
Community Health and Wellness	Central	Logan
Delaware Community Center YMCA	Central	Franklin
Eldon & Elsie Ward Family YMCA	Central	Franklin
Hilltop YMCS	Central	Franklin
Hocking Valley Community Hospital	Central	Logan
Junior Achievement of Central Ohio Inc.	Central	Franklin
Marion Family YMCA	Central	Marion
Mid-OH Food Collective	Central	Franklin
Nationwide Children's Hospital	Central	Franklin
Reynoldsburg Community Center YMCA	Central	Franklin
The Ohio State University Hospital East	Central	Franklin
United Way of Central Ohio	Central	Franklin
YWCA in Columbus	Central	Franklin
My Project USA - West Columbus	Central	Franklin
New African Immigrants Commission	Central	Franklin
Akron Children's Hospital	Northeast	Summit
Akron Children's Hospital Nurturing Families Program	Northeast	Summit
Akron Children's- Safe Sitter Program	Northeast	Summit
Aultman Health Foundation	Northeast	Stark
Cuyahoga County Public Library Social Work Services	Northeast	Cuyahoga
International Institute of Akron	Northeast	Summit
MyCom Cleveland	Northeast	Cuyahoga
Third Street Family Health Services	Northeast	Richland
Youngstown State University	Northeast	Mahoning
Community Health & Wellness Partners - Indian Lake	Northwest	Logan

Organization name	Region	County
Health Partners of Western Ohio	Northwest	Lima
Healthy Lucas County	Northwest	Lucas
Highland Village Apartments (low-income housing)	Northwest	Wyandot
Junior Achievement of North Central Ohio Inc.	Northwest	Multi
Lucas County Child Services	Northwest	Lucas
Lucas County Community Outreach	Northwest	Lucas
Partners in Education	Northwest	Lucas
YMCA/JCC of Greater Toledo	Northwest	Lucas
Adena Health Systems	Southeast	Ross
Athens-McMinn Family YMCA	Southeast	Meigs
Gallilopis Job and Family Services	Southeast	Gallia
HAP CAP Community Action	Southeast	Perry
Helping Hands Ministries	Southeast	Meigs
Holzer Health System	Southeast	Gallia
Jackson-Vinto Community Action, Inc.	Southeast	Jackson
Monroe County Job and Family Services	Southeast	Monroe
Women, Infants and Children (WIC)	Southeast	Gallia
Adams County WIC	Southwest	Adams
Every Child Succeeds	Southwest	Adams
Junior Achievement of OKI Partners Inc.	Southwest	Hamilton
Su Casa Hispanic Center	Southwest	Hamilton
Valley View Community Health Center	Southwest	Adams

Survey Respondents and Nonresponse Bias Analysis

Exhibit B25. Distribution of Roles in the Statewide Practitioner and CBO Survey Sample

Sample group	Respondent count
District Administrative Staff (Educational Practitioners)	85 (57%)
School Administrative Staff (Educational Practitioners)	40 (27%)
School Instructional Staff (Educational Practitioners)	16 (11%)
Other School Staff (Educational Practitioners)	9 (6%)
Practitioner Educational Respondent Total	150
Director (CBO)	3 (60%)
Case Manager (CBO)	1 (20%)
Other (CBO)	1 (20%)
CBO Respondent Total	5

Note. The table includes respondent roles for both the practitioner survey and the survey of CBOs. Source: Study team’s analysis of survey to practitioners and CBOs, 2024.

Exhibit B26. Response Rates on Practitioner and CBO Surveys

Population of interest	Total count of LEAs (percent of statewide LEA population in parentheses)	Total count of LEA responses (percent of all LEA responses in parentheses)	Response rate
Traditional	607 (65%)	94 (91%)	15%
Community Schools	240 (26%)	1 (1%)	<1%
Dropout and Recovery Schools	77 (8%)	7 (7%)	9%
STEM Schools	7 (1%)	1 (1%)	14%
Practitioner Survey Totals	931	103	11%
CBO Survey Totals	56	5	9%

Note. The table includes response information for both the practitioner survey and the survey of CBOs. The reported practitioner survey data is based on aggregating the survey responses to the LEA level, across all respondent types, and calculating response rate based on the share of LEAs with any responses compared to the total number of LEAs in the population. Source: Study team’s analysis of survey to practitioners and CBOs, 2024.

Exhibit B27. Composition of Practitioner Survey Respondents vs. Non-Respondents

Population of interest (units in parentheses)	Non-respondent average	Respondent average	Difference between non-respondent and respondent average
Students who are economically disadvantaged (%)	0.56	0.50	-0.06
Students with Disabilities (%)	0.16	0.16	0
English Learners (%)	0.03	0.02	-0.01
Non-White Students (%)	0.34	0.24	-0.10**
LEA Enrollment ()	1,478	2,336	858**
Region 1 LEAs (%)	0.12	0.11	-0.01
Region 2 LEAs (%)	0.04	0.04	0
Region 3 LEAs (%)	0.08	0.06	-0.02
Region 4 LEAs (%)	0.02	0.01	-0.01
Region 5 LEAs (%)	0.07	0.09	0.02
Region 6 LEAs (%)	0.06	0.05	-0.01
Region 7 LEAs (%)	0.06	0.08	0.02
Region 8 LEAs (%)	0.05	0.07	0.02
Region 9 LEAs (%)	0.04	0.07	0.03
Region 10 LEAs (%)	0.09	0.05	-0.04
Region 11 LEAs (%)	0.14	0.09	-0.05
Region 12 LEAs (%)	0.06	0.05	-0.01
Region 13 LEAs (%)	0.08	0.12	0.04
Region 14 LEAs (%)	0.02	0.04	0.02
Region 15 LEAs (%)	0.03	0.06	0.03
Region 16 LEAs (%)	0.03	0.00	-0.03
City Locale LEAs (%)	0.23	0.08	-0.15***
Rural Locale LEAs (%)	0.35	0.33	-0.02
Suburban Locale LEAs (%)	0.28	0.44	0.16**
Town Locale LEAs (%)	0.14	0.14	0.01

Note. Respondents and non-respondents are at the LEA level. Within group percentages may not add to one due to rounding. ** $p < .01$, *** $p < .001$. Source: Study team’s analysis of survey to practitioners, 2024; ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23; Building Disaggregated English Learner 2022/23; Building Disaggregated Disability 2022/23; Building Details 2022/23, NCES CCD Public Elementary/Secondary School Universe Data, CCD Geographic Data, 2022/23

Exhibit B28. Composition of CBO Respondents vs. Non-Respondents

Population of interest (units in parentheses)	Non-respondent average	Respondent average	Difference between non-respondent and respondent average
Students who are economically disadvantaged (%)	0.60	0.64	0.04
Students with Disabilities (%)	0.17	0.18	0.01
English Learners (%)	0.05	0.02	-0.03
Non-White Students (%)	0.34	0.18	-0.16
School Enrollment (#)	68,594	18,563	-50,031
Region 1 LEAs (%)	0.10	0.00	-0.10
Region 2 LEAs (%)	0.04	0.00	-0.04
Region 3 LEAs (%)	0.02	0.60	0.58
Region 4 LEAs (%)	0.10	0.00	-0.1
Region 5 LEAs (%)	0.08	0.00	-0.08
Region 6 LEAs (%)	0.08	0.00	-0.08
Region 7 LEAs (%)	0.02	0.20	0.18
Region 8 LEAs (%)	0.27	0.00	-0.27
Region 9 LEAs (%)	0.02	0.00	-0.02
Region 10 LEAs (%)	0.04	0.00	-0.04
Region 11 LEAs (%)	0.06	0.00	-0.06
Region 12 LEAs (%)	0.04	0.20	0.16
Region 13 LEAs (%)	0.14	0.00	-0.14
Region 14 LEAs (%)	N/a	N/a	N/A
Region 15 LEAs (%)	N/a	N/a	N/A
Region 16 LEAs (%)	N/a	N/a	N/A
City Locale LEAs (%)	0.37	0.00	-0.37
Rural Locale LEAs (%)	0.41	0.60	0.19
Suburban Locale LEAs (%)	0.20	0.40	0.20
Town Locale LEAs (%)	0.02	0.00	-0.02

Note. Respondents and non-respondents are aggregated to the county level. Given the very small sample size, differences between the two groups were not tested for statistical significance. Source: Study team’s analysis of survey to practitioners, 2024; ODEW Report Card – Building Disaggregated Economically Disadvantaged 2022/23; Building Disaggregated English Learner 2022/23; Building Disaggregated Disability 2022/23; Building Details 2022/23, NCES CCD Public Elementary/Secondary School Universe Data, CCD Geographic Data, 2022/23

Exhibit B29. Practitioner Degree of Agreement Regarding Access to Necessary Supports

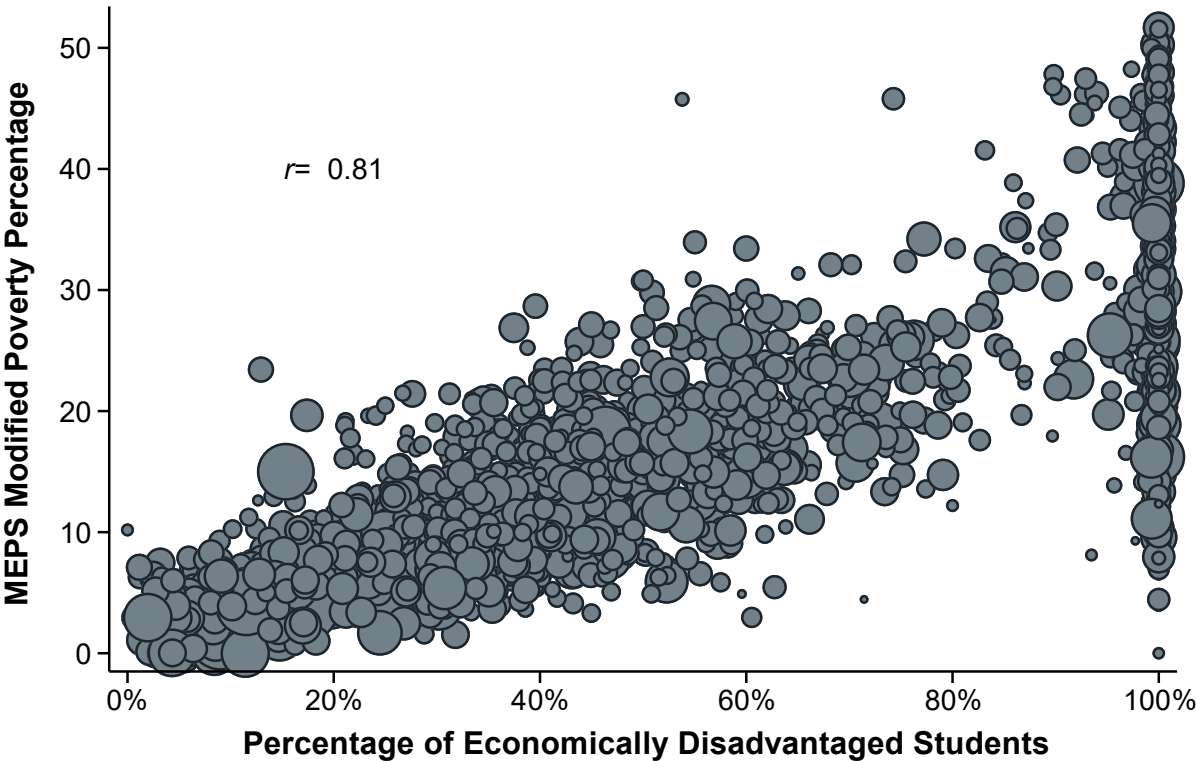
Response	School-based programs		Out-of-school-programs		CBO collaboration	
	Practitioner respondents count (%)	CBO respondents count (%)	Practitioner respondents count (%)	CBO respondents count (%)	Practitioner respondents count (%)	CBO respondents count (%)
Strongly Agree	14 (9.93)	0	2 (1.42)	0	20 (14.18)	2 (40)
Agree	80 (56.74)	3 (60)	33 (23.4)	2 (40)	88 (62.41)	1 (20)
Disagree	41 (29.08)	2 (40)	87 (61.7)	3 (60)	23 (16.31)	2 (40)
Strongly Disagree	6 (4.26)	0	19 (13.48)	0	1 (0.71)	0
Not Sure	0	0	0	0	9 (6.38)	0
Total	141 (100)	5 (100)	141 (100)	5 (100)	141	100

Note. Practitioner $n = 150$ and CBO $n = 5$. Respondent count is limited to survey takers who answered at least one survey question (beyond the opening information section). Total counts in the exhibit represent the number of respondents who answered the question. Source: Data are from the study team’s analysis of survey to practitioners, 2024.

Appendix C. Discrepancy Between MEPS and the Current Student Economic Disadvantage Measure

The scatterplot in Exhibit C1 shows the relationship among Ohio public K–12 schools between the MEPS poverty measure and the percentage of students who are economically disadvantaged. While the two measures are strongly related (correlation of 0.81), the economic disadvantage measure has an abundance of schools at or above 100% (and relatively few between 80% and 100%). This is due to the use of the CEP that allows schools to provide universal free- or reduced-price meals (FRPM) to students and discontinue tracking student eligibility, in which case the FRPM percentage is coded at 100%, effectively overestimating the true student need at these schools (Strawser, 2024). For this reason, we opted to use the MEPS poverty measure for the analysis in this chapter.

Exhibit C1. Relationship Between MEPS Poverty Measure and the Percentage of Students who are Economically Disadvantaged (2022–23)



Note. The size of dots represents total school enrollment in 2022–23.
Source: ODEW Report Card 2022–23, Urban Institute MEPS data.

Appendix D. Additional Methodology Detail

Additional Methods Detail

Descriptive Analysis

Analysis of Survey Data

Descriptive analysis of the available survey data includes an initial calculation of the rates of response for each variable of interest including service categories and primary service categories supporting students who are economically disadvantaged. Rates of response are calculated overall, and by analytic groups including LEA type (i.e., traditional, community, etc.), quartiles of the LEA percent of students who are economically disadvantaged, quartiles of LEA efficiency, and State Support Team (SST) regions, which define regions of state support within Ohio's Statewide System of Support.³ The rates are then analyzed overall and in cross-tabulation tables by analytic group, using a Chi-squared test to determine if there is an overall statistically significant association between the identified variable and each group (e.g., counts of respondents for each funding program by quartile, etc.). In general, this descriptive analysis of the survey data provides a high-level summary of the information provided by respondents for the topics addressed in our research questions.

Additionally, given that we examined two similar but distinct surveys, we sought to compare the information reported in each where possible. Specifically, for survey sections that overlap between the two surveys with respect to service category incidence, an additional comparison of the rates between the two surveys was also conducted. Specifically, we compared response rates between the Project Survey and ODEW Survey items reporting common service categories (see Exhibit D8). This was restricted to common LEA respondents of each survey sample to understand to what extent the two instruments suggest different findings with respect to the overlapping items. This allows for triangulation of two data sources when identifying common service categories.

Regressions

Building on the descriptive analyses, the research team used regression analyses to assess if resource inputs or services in LEAs and schools systematically vary relative to the percentage of students who are economically disadvantaged and if any systematic variation is moderated by other LEA and school characteristics or populations of students served. In chapter 5 we apply

³ More information can be accessed at <https://education.ohio.gov/Topics/School-and-District-Improvement/State-Support-Teams>.

two types of logistic regression – binomial and multinomial. These techniques are described further in the following section.

Logistic Regression

We leveraged logistic regression analysis to address the research questions in chapter 5 of the main report. Logistic regression is a general term for a group of models that are commonly used to estimate relationships when the outcome of interest is a categorical variable. It can be used to understand how certain variables are associated with a change in the predicted probability of a particular outcome. We applied binomial logistic regression (where the outcome variable of interest has two possible outcomes) and multinomial logistic regression (where more than two categories are possible in the outcome variable of interest).

We leveraged these techniques to examine the variation in primary service categories or the service category for which the respondent reported the largest share of their overall spending. Given its identification in the Project Survey as one of the top needs of students who are economically disadvantaged and the only such need addressed directly in the education system, we put special emphasis in this analysis on the service category of Mental Health Services.⁴

First, we estimate a binomial logistic regression with an indicator variable identifying LEAs for whom we have identified Mental Health Services as their primary service category as the outcome variable. As with the other analyses, we estimated a regression of this outcome on the percentage of students who are economically disadvantaged and LEA efficiency, along with previously noted LEA-level covariates. The results of this regression will illustrate whether, for example, an increase in the percentage of students who are economically disadvantaged is associated with an increase in the likelihood that an LEA will have Mental Health Services as its primary category.

Next, we estimate a multinomial logistic regression to assess whether the likelihood of an LEA having another primary service category as opposed to Mental Health Services is systematically associated with our key variables of interest. Specifically, we regress a categorical variable identifying for each LEA its primary service category on the percentage of students who are economically disadvantaged and LEA efficiency, along with the previously noted LEA-level covariates, with Mental Health Services as the base category. This multinomial model will help us unpack the results of the initial binomial regression. That is if, for example, the likelihood of having Mental Health Services as the primary category increases as the percentage of students who are economically disadvantaged increases, this model will help us understand what *other* service categories are *less* likely to be primary as opposed to Mental Health Services, given an increase in the percentage of students who are economically disadvantaged.

⁴ This finding about student needs is noted in the needs assessment memo provided previously.

Qualitative Analysis

The ODEW Survey includes open-ended written descriptions of the initiatives implemented by LEAs with SWSF and DPIA funds. In addition to the descriptions, respondents indicated a single service category under which the initiative fell.

To analyze these responses qualitatively, the research team first selected a sample of respondents stratified by LEA efficiency. This provided the opportunity to highlight differences by efficiency, if prevalent, in the qualitative information provided by respondents. Specifically, the bottom and top 20% of LEAs with respect to efficiency were identified and from each a random sample of 128 respondents were selected, roughly 80% of each group (i.e., 128 out of 160 each). Thus, the results of the qualitative analysis reflect trends for these two groups specifically and, given that they make up only 40% of the overall sample, cannot reliably be generalized to LEAs outside of these two groups. On the other hand, because the samples represent 80% of the two groups sampled, the results can more reliably be generalized to LEAs outside of the sample but within these two groups.

Next, the research team applied a coding structure to the descriptions provided by LEAs. The aim of the coding was twofold. First, responses were coded for initiative components that related to any of the possible service categories other than the one identified for each initiative by respondents. This provided a check on the robustness of the identified service categories embedded in the quantitative analysis of primary service categories.

For example, if descriptions of initiatives labeled as Mental Health Services were coded as Academic Supports and Physical Health Services, but not as Mental Health Services, this would suggest that this service category label is qualitatively dissimilar from the reported activities and thus cannot be taken at face value. Further, this would imply a need for caution in generalizing about differences in the use of funds based on these labels. In contrast, if overlap between service categories is minimal or modest, this would indicate the labels represent meaningful variation in the use of available funds.

The second aim of the coding was to understand the kind of activities the initiative service category labels entail. This coding structure was different than the one related to service categories. Instead, this coding structure captured the most frequent use of funds described by respondents in the survey according to a preliminary review of the range of responses in the sample.

Respondents could list up to 20 initiatives. The first five listed were used in this analysis. For each initiative provided, respondents indicated a single service category, a title, and description.

The first coding structure was the list of broad service categories used in the quantitative part of this analysis:

- Mental Health Services
- Physical Health Services
- Blended Learning and Instructional Technology
- Extended Day
- Targeted Support for Specific Populations
- Academic Supports
- School Climate and Safety
- Educator Quality and Recruitment
- Community and Family Engagement

The second coding structure included the following:

- Activities related to staff, such as hiring new staff, providing compensation for existing staff, or providing professional development opportunities
- Purchased services, such as acquiring staff (e.g., therapists) or programming (e.g., after-school enrichment programming) through partnership with an external, local- or national-level organization
- Technology (e.g., computers), transportation (e.g., paying for buses), and academic materials (e.g., curriculum) or classroom equipment (e.g., beakers)
- Covering the cost of student expenses, including fee waivers for tests or copays for health services
- General programming described (i.e., without other detail provided about use of funds), such as after-school tutoring
- When applicable, the research team coded for additional detail about the type of staffing and programming, including instructional (e.g., salary/benefits for teachers, a new class), case management/coordination (e.g., training for case managers, a family resource center), and support and prevention (e.g., hiring school psychologists, an SEL initiative)

To implement the analysis coding, a subset of the sample was used to train two members of the research team on the coding structure. The subset included 30 total initiative descriptions, equally divided by efficiency quintile (i.e., 15 from the top quintile and 15 from the bottom quintile). Two members of the research team (referred to from now on as “raters”) applied the

coding structure to the subset of initiative descriptions. Raters applied a code to an initiative if present. An inter-rater reliability analysis was performed to evaluate the degree of alignment between raters on use of the coding structure before proceeding with the analysis. Inter-rater reliability was calculated as the percentage of agreement between raters on the application of codes. Raters coded the subset separately and then discussed discrepancies to promote a shared understanding of the coding structure. Once sufficient inter-rater reliability was achieved (greater than 80% agreement), raters coded the remaining initiatives in the sample separately, splitting them up evenly.

Additional Data and Methods Exhibits

What follows are additional exhibits presenting information about the Project Survey and ODEW Survey service categories, responses and, for the former, analyzing for nonresponse bias.

Exhibit D1. Crosswalk of Project Survey and ODEW Survey Service Categories

Project survey service categories	ODEW survey service categories
Mental Health Services	Mental health services, including telehealth services Culturally appropriate, evidence-based or evidence-informed prevention education, youth-led programming and social and emotional learning curricula to promote mental health and prevent substance use and suicide
Physical Health Services	Physical health care services, including telehealth
Community and Family Engagement	Family engagement and support services Community liaisons or programs that connect students to community resources, including City Connects, Communities in Schools and other similar programs
Extended Day and Extended Year	Extended school day or school year (<i>DPIA funding only</i>) Student services provided prior to or after the regularly scheduled school day or at any time school is not in session, including mentoring programs
Targeted Support for Specific Populations	Services for homeless youth Services for child welfare-involved youth
Academic Supports	Reading improvement and intervention (<i>DPIA funding only</i>) Dropout prevention (<i>DPIA funding only</i>) Academic interventions for students in grades 6-12 (<i>DPIA funding only</i>) Community learning centers that address barriers to learning (<i>DPIA funding only</i>)

Project survey service categories	ODEW survey service categories
Educator Quality and Recruitment	Professional development in reading instruction for teachers of students in kindergarten through grade 3 (<i>DPIA funding only</i>)
	Professional development cultural competency
	Professional development trauma informed care
	Employment of an individual who has successfully completed the Bright New Leaders for Ohio Schools program as a principal or assistant principal (<i>DPIA funding only</i>)
School Climate and Safety	School safety and security measures (<i>DPIA funding only</i>)
Instructional Technology or Blended Learning	Instructional technology or blended learning (<i>DPIA funding only</i>)

Note. DPIA = Disadvantaged Pupil Impact Aid. The ODEW Survey service categories align to the options provided in the ODEW Survey protocol (ODEW, 2022), as well as the allowable types of initiatives under SWSF and/or DPIA, detailed in Ohio Revised Code, (2023). The Project Survey service categories align to the options provided in the Project Survey Protocol section below.

Exhibit D2. Response Rates on Project Survey

Population of interest	Total count of LEAs (percent of statewide LEA population in parentheses)	Total count of LEA responses (percent of all LEA responses in parentheses)	Response rate
Traditional	607 (65%)	94 (91%)	15%
Community Schools	240 (26%)	1 (1%)	<1%
Dropout and Recovery Schools	77 (8%)	7 (7%)	9%
STEM Schools	7 (1%)	1 (1%)	14%
Survey Totals	931	103	11%

Note. The table includes response information for the Project Survey. The reported survey data is based on aggregating the survey responses to the LEA level, across all respondent types, and calculating response rate based on the share of LEAs with any responses compared to the total number of LEAs in the population. Source: Research team’s analysis of Project Survey, 2023/24.

Exhibit D3. Composition of Project Survey Respondents vs. Non-Respondents

Population of interest (units in parentheses)	Non-respondent average	Respondent average	Difference between non-respondent and respondent average
Students who are economically disadvantaged (%)	0.56	0.50	-0.06
Students with disabilities (%)	0.16	0.16	0
English learners (%)	0.03	0.02	-0.01
Non-White students (%)	0.34	0.24	-0.10**
LEA enrollment (#)	1,478	2,336	858**
Region 1 LEAs (%)	0.12	0.11	-0.01
Region 2 LEAs (%)	0.04	0.04	0
Region 3 LEAs (%)	0.08	0.06	-0.02
Region 4 LEAs (%)	0.02	0.01	-0.01
Region 5 LEAs (%)	0.07	0.09	0.02
Region 6 LEAs (%)	0.06	0.05	-0.01
Region 7 LEAs (%)	0.06	0.08	0.02
Region 8 LEAs (%)	0.05	0.07	0.02
Region 9 LEAs (%)	0.04	0.07	0.03
Region 10 LEAs (%)	0.09	0.05	-0.04
Region 11 LEAs (%)	0.14	0.09	-0.05
Region 12 LEAs (%)	0.06	0.05	-0.01
Region 13 LEAs (%)	0.08	0.12	0.04
Region 14 LEAs (%)	0.02	0.04	0.02
Region 15 LEAs (%)	0.03	0.06	0.03
Region 16 LEAs (%)	0.03	0.00	-0.03
City locale LEAs (%)	0.23	0.08	-0.15***
Rural locale LEAs (%)	0.35	0.33	-0.02
Suburban locale LEAs (%)	0.28	0.44	0.16**
Town locale LEAs (%)	0.14	0.14	0.01

Note. Respondents and non-respondents are at the LEA-level. Within group percentages may not add to one due to rounding. ** $p < .01$, *** $p < .001$. Source: Research team’s analysis of the Project Survey, 2023/24; ODEW Report Card—Building Disaggregated Economically Disadvantaged 2022/23; Building Disaggregated English Learner 2022/23; Building Disaggregated Disability 2022/23; Building Details 2022/23, NCES CCD Public Elementary/Secondary School Universe Data, CCD Geographic Data, 2022/23.

Exhibit D4. Response Rates on the ODEW Survey

Population of interest	Total count of LEAs (percent of statewide LEA population in parentheses)	Total count of LEA responses (percent of all LEA responses in parentheses)	Response rate
Traditional	607 (65%)	586 (70%)	97%
Community Schools	240 (26%)	180 (21%)	75%
Dropout and Recovery Schools	77 (8%)	70 (8%)	91%
STEM Schools	7 (1%)	7 (1%)	100%
Survey Totals	931	843	91%

Note. The table includes response information for the ODEW Survey. The reported survey data is collected at the LEA level and calculating response rate based on the share of LEAs with any responses compared to the total number of LEAs in the population. Two LEAs are not included in the population due to the fact that they have no students, and an additional two are excluded due to a lack of ODEW Report Card data. Source: Research team’s analysis of ODEW survey, 2023.

Project Survey Protocol

The following is the Project Survey protocol, including only an excerpt of items relevant to the analysis in this memo.

Opening

The Ohio Department of Education and Workforce has partnered with the American Institutes for Research® (AIR®) and WestEd to study the costs necessary for supporting students in Ohio who are economically disadvantaged to advance their learning outcomes.

A vital part of this study is gathering information about student needs and current programs and services from practitioners who work closely with students who are economically disadvantaged, and their families and communities. WestEd, a nonpartisan and nonprofit research agency, is spearheading this aspect of the study, including administering a statewide practitioner survey.

Thank you for your willingness to participate in this survey.

Your responses will be kept confidential and will not be shared with the Ohio Department of Education and Workforce (DEW), nor will we evaluate individual responses. Nothing you share will be used for auditing or compliance purposes, and participation or non-participation in this process will not be shared with the DEW.

The survey will take approximately 10 minutes to complete.

Background

1. Please select your district. [drop down menu]
2. Which best describes your role at [the identified district/your school in identified district]?
 - District staff
 - School administrative staff
 - School instructional staff
 - Other school staff—please specify
- a. **[SKIP LOGIC: if any school staff options were selected]** Which grade level of students do you serve? Please select all that apply.
 - » Elementary (grade PK-5),
 - » Middle (grade 6-8),
 - » High (grade 9-12),
 - » Other—please specify

b. [SKIP LOGIC: if any school staff options were selected] Which best describes your school(s)?

- » Traditional public school,
- » Start-up community school,
- » Conversion community school
- » Other—please specify

Current Programs and Services

For the questions nine through fourteen, consider the specific activities provided in [the identified district/your school in identified district] to support students who are economically disadvantaged.

3. Consider the table below and indicate for each type of program/service whether it is **(1) currently provided, (2) currently provided but NOT needed, (3) NOT currently provided but needed, or (4) NOT currently provided or needed** to support the needs of students who are economically disadvantaged.

Program/Service	Currently provided and needed	Currently provided but NOT needed	NOT currently provided but needed	NOT currently provided or needed
Mental health services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical health services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community and family engagement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extended day (including before/after school programming) and extended year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Targeted support for specific populations (e.g., homeless youth, child welfare-involved youth, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Academic supports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Educator quality and recruitment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School climate and safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Instructional technology or blended learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Career and technical education and postsecondary readiness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Please describe any other programs/services not listed above that [the identified district/your school in identified district] is currently providing to support students who are economically disadvantaged. [open-ended response]
5. Please identify the general types of **personnel** roles that support implementation of the above programs and services. Please select all that apply.
 - **Instructional or educational roles** (e.g., teachers, instructional paraprofessionals, academic tutors, remedial specialists, teaching aide, remedial specialist, etc.),
 - **Related services roles** (e.g., speech and language therapist, occupational/physical therapist, audiologist, etc.),
 - **School administrative roles** (e.g., school principal, assistant principal, department heads, etc.),
 - **School-based mental/physical health roles** (e.g., school nurse, social workers, school counselors, etc.),
 - **Other school roles** (e.g., library/media, audio/visual, technology, etc.), F. **District administrative roles** (e.g., district coordinators/directors, curriculum specialist, etc.),
 - **Other personnel roles**
6. Please describe for each identified type of personnel role the responsibilities specific to their support for students who are economically disadvantaged. [open-ended response] [SKIP LOGIC: Prompt for each personnel type selected.]
 - a. **Instructional or educational roles**
 - b. **Related services roles**
 - c. **School administrative roles**
 - d. **School-based mental/physical health roles**
 - e. **Other school roles**
 - f. **District administrative roles**
 - g. **Other personnel roles**
7. Please identify the general types of **non-personnel** resources that support implementation of the above programs and services. Please select all that apply.
 - **Educational equipment or technology** (e.g., laptops and/or desktop computers, tablets, etc.),
 - **Educational software** (e.g., digital curriculum materials, adaptive intervention tools, online resources, student performance/assessment tools, etc.),
 - **Specialized facilities** (e.g., laboratory classrooms, etc.),
 - **Other non-personnel resources**

8. Which funds are used to provide programs and services to support the particular needs of students who are economically disadvantaged in [the identified district/your school in identified district]? Please check all that apply.
- **Disadvantaged Pupil Impact Aid (DPIA),**
 - **Student Wellness and Success Fund (SWSF),**
 - **Other state funding sources,**
 - **Title I, Part A—Improving Basic Programs Operated by State and Local Educational Agencies,**
 - **Title I, Part C—Education of Migratory Students** (to serve students who are economically disadvantaged within the migratory student population),
 - **Title I, Part D—Prevention and Intervention Programs for Children and Youth Who Are Neglected, Delinquent, or At-Risk** (to serve students who are economically disadvantaged within the neglected, delinquent, or at-risk student population),
 - **Title III—Language Instruction for English Learners and Immigrant Students** (to serve students who are economically disadvantaged within the English learner population),
 - **Title IV—21st Century Schools** (to serve students who are economically disadvantaged within 21st Century Schools programs),
 - **Other federal funding sources**
 - **Local funding sources**
 - **I don't know**
- a. **[SKIP LOGIC:** If “Other state funding sources” was selected.] Please list the additional state funding sources used to support students who are economically disadvantaged in [the identified district/your school in identified district]. [open-ended response]
- b. **[SKIP LOGIC:** If “Other federal funding sources” was selected.] Please list the additional federal funding sources used to support students who are economically disadvantaged in [the identified district/your school in identified district]. [open-ended response]
- c. **[SKIP LOGIC:** If “Local funding sources” was selected.] Please describe the local funding sources used to support students who are economically disadvantaged in [the identified district/your school in identified district]. [open-ended response]

Additional Comments

9. Is there anything else you would like to share with us to help improve supports for students who are economically disadvantaged in Ohio? [open-ended response]

Additional Analysis Results

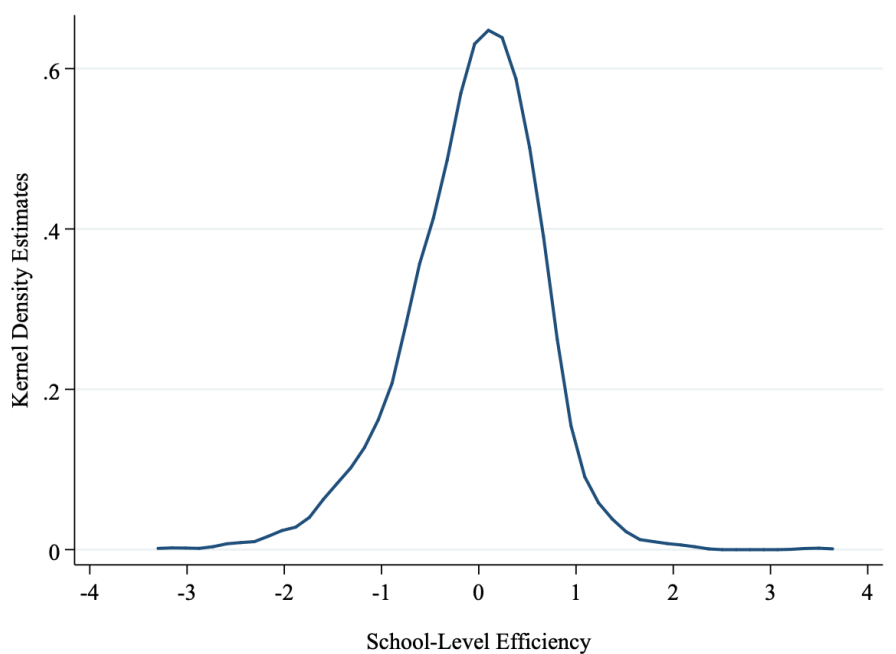
Additional Analysis of School and LEA Efficiency

As a part of addressing all research questions, we examine whether the results vary significantly depending on the level of efficiency in an LEA or school. Thus, it is important to have an understanding of our measure of efficiency and how it varies across the state and in our survey samples.

As noted in the Methodology section, the efficiency measure used in these analyses is a school-level measure derived from the results of a cost function analysis and reflects the extent to which a school is spending less than its cost to meet a set of outcome standards while reaching or even exceeding those standards.

Within our analysis sample, a maximum of about 800 LEAs and 3,000 schools have an efficiency score, which represents around 86% of LEAs (797 out of 931) and 89% of schools (2,989 out of 3,372). The schools and LEAs excluded from this group include nearly a third of all Dropout and Recovery LEAs (24 out of 77) and nearly a quarter of all Community School LEAs (54 out of 243). For those schools with this measure available, efficiency has a normal distribution, clustered around an average of -0.056 (see Exhibit D5).

Exhibit D5. Distribution of School Efficiency

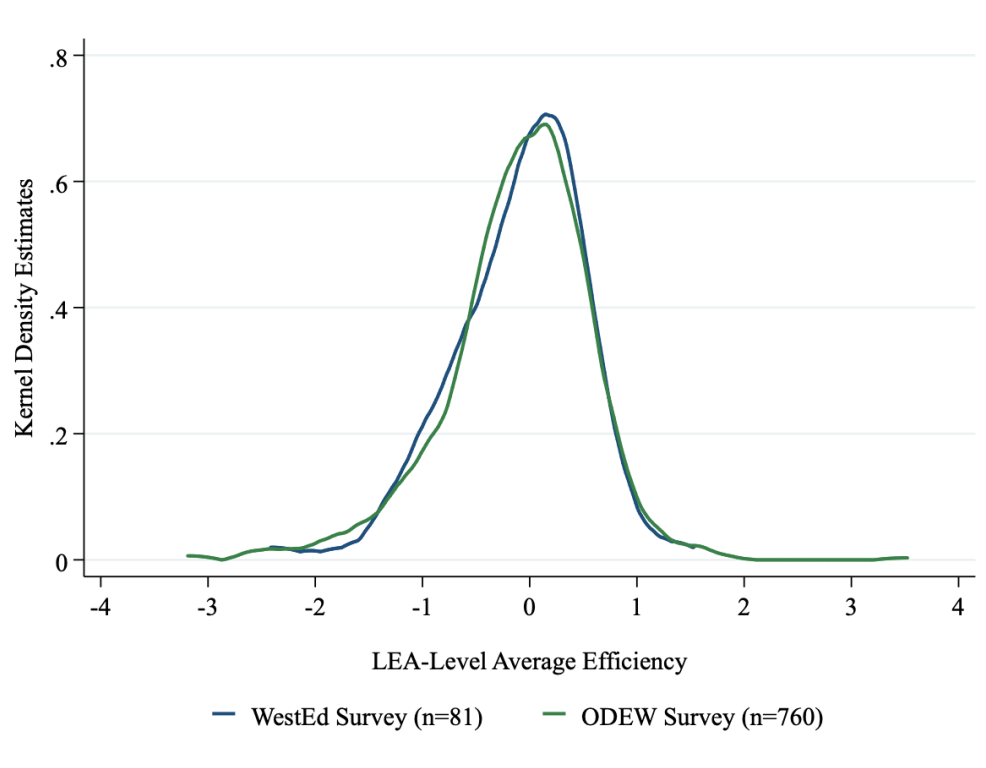


Note. $n = 2,989$ total schools. Figure plots kernel density estimates, an approach to smoothing a probability density function and a common way of displaying the distribution of a measure. In general, the height of the line, or the kernel density estimate, represents the relative likelihood that any given value of a measure will be at or around a particular point within the range of possible values. This figure illustrates, therefore, that school-level efficiency is normally distributed, centered around zero with a small amount of both negative and positive outliers. Source: Research team analysis.

Within LEAs, school-level efficiency ranges an average of about 0.541 (see Exhibit D6). LEA-level efficiency has a similar distribution to the school level, clustered around an average of -0.126 standard deviations.

Within the ODEW survey sample, 760 LEAs have efficiency data, amounting to roughly 90% of the overall sample of 843 LEAs. Additionally, 81 LEAs (96%) have efficiency data in the Project Survey analysis sample of 84 LEAs. When considering efficiency, we find that the ODEW Survey and Project Survey have very similar distributions, both of which are normal and clustered around averages of -0.102 and -0.095 respectively (see Exhibit D6). However, the Project Survey exhibits a lower range than the ODEW survey, with a minimum value of -2.415 and a maximum of 1.530, compared to the ODEW survey range, which is very similar to the overall sample. It is particularly noteworthy is that the Project Survey has fewer “high-efficiency” LEAs with values of more than zero.

Exhibit D6. Distribution of LEA-Level Efficiency by Survey Instrument



Note. Underlying counts of LEAs reported in the exhibit by survey. Figure plots kernel density estimates, an approach to smoothing a probability density function and a common way of displaying the distribution of a measure. In general, the height of the line, or the kernel density estimate, represents the relative likelihood that any given value of a measure will be at or around a particular point within the range of possible values. This figure illustrates, therefore, that LEA-level efficiency for both surveys is normally distributed, centered around zero with a small amount of both negative and positive outliers for each, though the ODEW Survey shows relatively more outliers, including notably more positive outliers. Source: Research team analysis.

In summary, school and LEA efficiency is normally distributed in our sample overall and for our survey data samples, and the survey samples are generally similar with respect to efficiency.

Exhibit D7. Summary Statistics for School- and LEA-Level Efficiency

Variable	Count	Average	Median	Standard deviation	Minimum	Maximum
School-Level Efficiency	2,989	-0.056	0.010	0.682	-3.184	3.524
Within-LEA Range in School-Level Efficiency	797	0.541	0.437	0.575	0.00	4.618
LEA-Level Efficiency	797	-0.126	-0.035	0.702	-3.188	3.523
ODEW Survey LEA-Level Efficiency	760	-0.102	0.025	0.683	-0.151	-0.053
Project Survey LEA-Level Efficiency	81	-.095	.005	.629	-2.415	1.530

Note. This exhibit shows descriptive statistics for the efficiency measure by each level of aggregation overall and for LEAs responding to the ODEW and/or Project Survey.

Additional Analysis Comparing the ODEW Survey and Project Survey

As noted in the main body of this memo, the ODEW Survey and the Project Survey have a few items that overlap, allowing for comparisons, specifically with respect to the types of services supporting this population. The main results illustrate the comparison of the responses to these items across the full samples in each survey. However, it is also possible to compare the responses for only respondent LEAs that complete both surveys.

When we restrict each survey’s sample to LEAs who responded to both, we find that reported service categories differ between surveys, similar to the comparison of the sample overall (see the research question 1 results section of chapter 5 of the main report). In general, in Project Survey, LEAs were more likely to report all service categories, whereas in the ODEW Survey responses, there was more variation (see Exhibit D8). These differences in reported service categories perhaps reflect the difference in scope of the two surveys. In particular, the wider scope of the Project Survey may be capturing services for students who are economically disadvantaged that fall outside of services supported with DPIA and SWSF funds. These in turn may include a wider range of services.

Overall, these results support the main finding and suggest that, even within the same LEAs, there are a wider range of services for students who are economically disadvantaged than just those supported with DPIA and SWSF funds, and these additional services are supported by a wider range of funding programs.

Exhibit D8. Percentage of Respondents Reporting Service Category Is Currently Used to Support Students Who Are Economically Disadvantaged, by Fund and Survey

Service category	Percent of total respondents Project survey	Percent of total respondents ODEW survey	Percentage point difference
Academic supports	98	49	49***
Career and technical education and postsecondary readiness	99	0	99***
Community and family engagement	98	34	63***
Educator quality and recruitment	96	13	83***
Extended day (including before/after school programming) and extended year	95	17	78***
Instructional technology or blended learning	99	13	85***
Mental Health Services	96	84	12**
Physical Health Services	94	45	49***
School climate and safety	99	22	77***
Targeted support for specific populations	93	6	87***

Note. $n = 82$ LEAs. Table only shows LEAs who responded to both surveys and denotes the statistical significance of differences in responses based upon a two-tailed t-test for significance. ** $p < .01$, *** $p < .001$. Source: Project Survey, 2023/24; ODEW Survey, 2023.

Qualitative Analysis of Variation in Initiative Service Categories

When considering the results of the analysis of service categories reported in the ODEW Survey, one potential issue is whether these labels truly reflect something qualitatively consistent about the initiatives to which they are assigned. As each initiative is described to some extent in open-ended responses, a qualitative analysis can help answer this question.

Specifically, through a review of the open-ended initiative descriptions, the research team applied a coding structure to assess what specific type of service or types of services are evident in the descriptions themselves, the extent to which initiatives tend to reflect multiple types of services, and whether this varies systematically by the service type assigned to the initiative. With respect to initiatives for which multiple service types are described, this would include, for example, an initiative identified as Mental Health Services, whose description includes services that can be reasonably described as including both Mental Health Services and Academic Supports, and Community and Family Engagement. We will refer to this sort of initiative as having “blurry services.”

If this analysis reveals that blurry services are very common, it would point to a major limitation in the analysis of reported service categories. Further, an analysis of the variation in the tendency for initiatives to be blurry will point to which service categories are most subject to this issue, and/or may most often overlap regardless of the identified service category.

In brief, the results of this analysis suggest that blurry services are present but only modestly common being found in about 29% of initiatives overall. Most respondents have at least one initiative with blurry services, and typically the overlap is with one other service category, as opposed to multiple. In general, blurry services are found in both the low-efficiency and high-efficiency samples reviewed in the qualitative analysis, and most commonly found for Mental Health Services, Community and Family Engagement, Extended Day and Extended Year, and Academic Supports (see Exhibit D9).

Exhibit D9. Unduplicated Count and Share of Initiatives and LEAs With At Least One Overlapping Initiative by Most Common Service Categories and Respondent Group

Service category	Number of initiatives (percent of initiatives)		Number of LEAs (percent of LEAs)	
	Low-efficiency quintile	High-efficiency quintile	Low-efficiency quintile	High-efficiency quintile
Mental Health Services	21 (22.6%)	35 (30.2%)	20 (30.8%)	30 (30.1%)
Community and Family Engagement	13 (14.0%)	12 (10.3%)	22 (33.8%)	19 (19.6%)
Academic Supports	12 (12.9%)	12 (10.3%)	11 (16.9%)	12 (12.3%)
Extended Day and Extended Year	11 (11.8%)	22 (19.0%)	9 (13.8%)	19 (19.6%)
TOTAL	93	116	65	97

Note. The exhibit displays the unduplicated count of initiatives that were coded as at least one service category not identified by respondents as the primary. Percentages are the share of overlapping initiatives with Mental Health Services, Community and Family Engagement, Academic Supports, or Extended Day and Extended Year as the primary relative to the total number of overlapping initiatives in the sample. The values (counts and percentages) provided are the initiative- and LEA-level. Source: ODEW Survey.

Moreover, Mental Health Services and Community and Family Engagement are most often overlapping with each other. The two other service categories with frequent overlap are Extended Day and Extended Year and Academic Supports, which also are most often

overlapping with each other. While Extended Day and Extended Year does sometimes overlap with Community and Family Engagement, the extent is limited. Of the 209 initiatives that were coded (30% of the 689 total initiatives), initiatives with overlap in these four categories make up the majority (66%) of the initiatives that were coded.

With regards to differences by efficiency, both groups follow the predominant trends in blurry services described (see Exhibit D10). One point of contrast is that the overlap between Extended Day and Extended Year and Academic Supports (and vice versa) is more common among high- efficiency LEA respondents than low efficiency. This suggests the qualitative similarity between the categories might be more pronounced among high-efficiency LEA respondents. In addition, there are some differences in efficiency with respect to the overlap between Mental Health Services and other categories besides Community and Family Engagement. Mental Health Services overlaps more with Educator Quality and Recruitment and School Climate for high- efficiency than low-efficiency LEA respondents.

Exhibit D10. Count and Share of the Most Common Overlapping Service Categories

Primary initiative service category	Coded initiative service category	Number of initiatives (percent of overlapping initiatives)	
		Low-efficiency quintile	High-efficiency quintile
Mental Health Services	Community and Family Engagement	15 (16.1%)	22 (19%)
	Physical Health Services	3 (3.2%)	2 (1.7%)
	Educator Quality and Recruitment	1 (1.1%)	10 (8.6%)
	School Climate and Safety	1 (1.1%)	4 (3.4%)
Community and Family Engagement	Mental Health Services	13 (14.0%)	12 (10.3%)
	Academic Supports	3 (3.2%)	5 (4.3%)
	School climate and safety	4 (4.3%)	4 (3.4%)
	Educator Quality and Recruitment	2 (2.2%)	0
Academic Supports	Mental Health Services	6 (6.5%)	1 (0.8%)

Primary initiative service category	Coded initiative service category	Number of initiatives (percent of overlapping initiatives)	
		Low-efficiency quintile	High-efficiency quintile
	Extended Day and Extended Year	1 (1.1%)	6 (5.17%)
	Educator Quality and Recruitment	1 (1.1%)	2 (1.7%)
	Instructional Technology or Blended Learning	1 (1.1%)	2 (1.7%)
Extended Day and Extended Year	Academic Supports	7 (7.5%)	16 (13.8%)
	Mental Health Services	2 (2.2%)	3 (2.6%)
	Community and Family Engagement	2 (2.2%)	3 (2.6%)
	Physical Health Services	1 (1.1%)	1 (1.1%)
TOTAL		93	116

Note. The exhibit displays unduplicated count and share of total initiatives labeled as Mental Health Services, Community and Family Engagement, Academic Supports, or Extended Day and Extended Year by respondents, broken down by most common categories of overlap. Source: ODEW Survey.

In addition, the research team also applied a coding structure to the open-ended survey responses to gain further detail about the kinds of activities associated with the service category initiatives. Specifically, codes captured, qualitatively, how respondents reported using funds. Codes involved activities related to staff, such as hiring new staff, providing compensation for existing staff, or providing professional development opportunities. Purchased services were also coded for, which involved acquiring staff (e.g., therapists) or programming (e.g., after-school enrichment programming) through partnership with an external, local- or national-level organization. Technology (e.g., computers), transportation (e.g., paying for buses), and academic materials (e.g., curriculum) or classroom equipment (e.g., beakers) were other categories of activities. The coding structure also identified whether funds covered the cost of student expenses, including fee waivers for tests or copays for health services. Finally, a code was applied for general programming described (i.e., without other detail provided about use of funds), such as after-school tutoring. When applicable, the research team coded for additional detail about the type of staffing and programming, including instructional (e.g., salary/benefits for teachers, a new class), case

management/coordination (e.g., training for case managers, a family resource center), and support and prevention (e.g., hiring school psychologists, an SEL initiative).

Overall, most initiatives received at least one code for activities—83.4% of initiatives; 90.2% of LEAs (see Exhibit D11). Responses from low-efficiency LEAs (40.7% of LEAs with at least one code) were coded as describing a resource/activity less frequently than high-efficiency LEAs (59.3% of LEAs with at least one code). According to this review of open-ended responses, purchased services, providing salary and benefits for support and prevention staff, hiring support and prevention staff, and providing support and prevention or instructional programming were the most common activities. The mix of support and prevention and instructional activities aligns with the service categories most commonly identified by respondents, Mental Health Services and Academic Supports.

Exhibit D11. Activities Code Counts and Percentage for Mental Health Services and Academic Supports Initiatives With At Least One Overlapping Activity Code

Activity code	Mental health services Number of initiatives (percent of initiatives)		Academic supports Number of initiatives (percent of initiatives)	
	Low efficiency	High efficiency	Low efficiency	High efficiency
Purchased services	18 (21.1%)	40 (23.1%)	2 (4.8%)	2 (4.9%)
Salary and benefits for existing staff				
Support and prevention	16 (18.8%)	42 (24.3%)	1 (2.4%)	2 (4.9%)
Instructional	1 (1.3%)	1 (0.6%)	10 (23.8%)	9 (22.0%)
Coordination and case management	4 (4.7%)	5 (2.9%)	0	1 (2.4%)
Student services	1 (1.2%)	0	0	2 (4.9%)
Materials	5 (5.9%)	3 (1.7%)	4 (9.5%)	3 (7.3%)
Equipment/facilities	0	2 (1.2%)	0	0
Technology	3 (3.5%)	1 (0.6%)	0	4 (9.8%)
Transportation	0	0	0	0

Activity code	Mental health services Number of initiatives (percent of initiatives)		Academic supports Number of initiatives (percent of initiatives)	
	Low efficiency	High efficiency	Low efficiency	High efficiency
Hire new staff				
Support and prevention	13 (15.3%)	21 (12.1%)	1 (2.2%)	1 (2.4%)
Instructional	1 (1.2%)	1 (0.6%)	4 (9.5%)	4 (9.8%)
Coordination and case management	6 (7.1%)	12 (6.9%)	3 (6.7%)	2 (4.8%)
Train staff				
Support and prevention	3 (3.5%)	11 (6.4%)	0	0
Instructional	4 (4.7%)	1 (0.6%)	1 (2.2%)	3 (7.3%)
Coordination and case management	0	0	0	0
Programming				
Support and prevention	7 (8.2%)	27 (15.6%)	5 (11.9%)	0
Instructional	3 (3.5%)	2 (1.2%)	4 (21.4%)	8 (19.5%)
Coordination and case management	1 (1.2%)	4 (2.3%)	2 (4.8%)	0
TOTAL	85 (100%)	173 (100%)	42 (100%)	41 (100%)

Note. The exhibit displays the count of initiatives labeled by respondents as Mental Health Services or Academic Supports that received at least one activities code. Counts represent for each activity code the number of initiatives labeled as Mental Health Services or Academic Supports. The percentages reflect for each activity code the share of initiatives that received that code out of the total Mental Health Services or Academic Supports initiatives that received at least one code. Source: ODEW Survey.

Overall, activities codes were applied more frequently to initiatives labeled by respondents as Mental Health Services than Academic Supports. According to the coding, a common activity for Mental Health Services initiatives involved purchased services (e.g., making available for students the services of mental therapists at a local hospital). The second most common activity code was providing compensation (salary and benefits) to support and prevention staff.

Taken together, Mental Health Initiatives seemed to involve supporting existing mental health staff or purchasing services from an outside agency, as opposed to hiring new staff. The trend was similar for high- and low-efficiency LEAs.

Given that the “Academic Supports” label included a varied range of service types—Reading Support and Intervention, Dropout Prevention, and general Academic Supports for Grades 6–12—the research team broke down the Academic Supports label into its component parts to gain additional detail about initiative activities.

This analysis showed that all of the initiatives that were coded as providing compensation for existing instructional staff were labeled by respondents as Reading Support and Intervention. This suggests that, at least for the initiatives described as providing compensation for instructional staff, the main type of staff supported are involved with reading/literacy intervention. There also appeared to be differences in the focus of Academic Supports programming and services by LEA efficiency. All of the initiatives coded as Instructional Programming (e.g., a tutoring initiative) for high-efficiency LEAs were labeled by respondents as Reading Support and Intervention. Seven out of the nine Instructional Programming initiatives by low- efficiency LEAs were related to either Academic Support for grades 6-12 (3) or Dropout Prevention and Support (4). Perhaps similarly, low-efficiency LEAs had a modest number (11.9%) of Academic Supports initiatives that were coded as support and prevention programming, whereas low-efficiency LEAs did not have any. Further, the five initiatives that received a code for support and prevention programming were labeled by respondents as Dropout and Prevention Support. Examples within this category included providing wrap-around supports for at-risk students, credit recovery initiatives, and, generally, initiatives that provided a flexible or accommodated pathway to graduation. Overall, the coding suggests that Academic Supports activities varied to some extent by LEA efficiency, with high-efficiency LEA respondents more commonly describing initiatives that pertain to reading/literacy support and low-efficiency LEAs describing those that involve more general academic support.

It is important to note that there are limitations of this analysis. One is that, especially in the case of Academic Supports initiatives that received at least one activities code, the number of initiatives in each category is relatively small. In addition, the analysis is limited to the detail provided by respondents in the descriptions of initiatives. The extent to which these descriptions provide accurate insight into the kind of initiatives provided is unclear. Thus, the trends described in this analysis should be interpreted with caution.

Additional Analysis of Primary Service Categories

The analysis of primary service categories addressing research question 3 depends on a few underlying assumptions which warrant a closer look.

First, recall that the identification of “primary service category,” as noted in the Data and Methods section of the report, is based on calculating the share of reported spending by service category for each LEA respondent and then identifying for each the category with the largest share. In this way, the “identification” of primary is a preference revealed in how a given respondent reported allocating spending, and not based upon what a respondent may view as “most important” or “primary.” The research team sees this as a stronger way to assess LEA preferences since it does not depend on the perceptions of the individual completing the survey.

However, obviously it is crucial that the service categories identified in the survey have a consistent and meaningful relationship with the specific services for which they provide a general label. For example, if initiatives labeled as Mental Health Services routinely included a range of activities that are minimally related or even unrelated to supporting student mental health, any analysis taking this label at face value would be inappropriate. The qualitative analysis of open-ended descriptions of initiatives examines whether there is evidence of this issue and finds that while some initiatives include activities that can be viewed as fitting another label, in general the identified service category is appropriate to the reported services, and for the majority of initiatives the only evident type of service. See the Qualitative Analysis of Variation in Initiative Service Categories section for more details.

Even if the service category label is appropriate and consistent, it is still an issue if certain labels tend to include services which overlap each other. For example, this would be the case if Academic Supports and Extended Day and Extended Year typically include services which contain elements of both regardless of which of the two labels is chosen.

This sort of issue is why one of the most important assumptions of a multinomial logistic regression model is the independence of irrelevant alternatives (IIA) assumption. In general, under this assumption the likelihood of choosing a given available outcome in the dependent variable instead of another cannot depend on the availability of another option. For example, the choice of Academic Services instead of Mental Health Services cannot depend upon the availability of Extended Day and Extended Year as a potential primary category.

One specific concern often cited is that some options have embedded commonalities that make their apparent differences less meaningful when other options are present. A common example relates to U.S. political elections in which a person’s decision between candidates in the two major parties—Republican and Democratic—is likely to depend on whether or not a third-party candidate is an available option. If true, this would violate the IIA assumption. Another common example relates to transportation. In this example, one is given the choice between a bus, a train, or driving oneself. A multinomial analysis might find some profiles of people are likely to prefer a bus over driving oneself. Suppose then that two bus options are offered—a red and a

blue bus. In that case, the same people choosing bus originally will very likely divide their choices among the two new options resulting in a lower likelihood of choosing either bus option over driving. In the present analysis, the issue would arise if some service categories are in fact akin to red and blue buses in that the services underlying them are fundamentally the same, and the difference of label is as superficial as bus color.

To some extent, the qualitative analysis can inform whether or not this assumption is being violated. Specifically, even if in general it is not common for a specific service to be described as something very distinct from its service category, it is still possible that specific categories systematically contain overlapping elements such that they are for all intents and purposes identical in nature, and the difference of label is not meaningful. As noted in Qualitative Analysis of Variation in Initiative Service Categories section, we find suggestive evidence that two pairs of service categories may be linked in this way. Specifically, Mental Health Services and Community and Family Engagement as well as Academic Supports and Extended Day and Extended Year are found to be the most common categories that overlap with each other. This result is limited in that the analysis is of a sample of respondents (~30%), and the share of services within the sample with this sort of link is somewhat minimal. Nonetheless, this suggests that testing for the presence of an IIA violation is warranted.

There are a range of formal tests that can be conducted to assess for IIA violations (e.g., Hausman-McFadden, Small-Hsiao, etc.), and many depend on assessing whether the results of the multinomial model change after restricting the model to a subset of options. This is sometimes referred to as partitioning tests. In brief, if the full model results are similar to the restricted model, which removes individuals identifying a choice or subset of choices, then this is evidence that IIA is not violated. However, if the two models are distinct, this would suggest an IIA violation. Though straightforward conceptually, there is some reason to be cautious in using available tools to apply these tests (see for example Cheng & Long, 2007).

However, it is still possible to conduct this sort of test less formally to determine if there is any suggestive evidence of an IIA violation. Specifically, one can simply estimate the full multinomial model, and then estimate a restricted binomial model for each pair of the base category, in this case Mental Health Services, and the available alternatives. Specifically, the “restricted model” is a binomial of the given category and Mental Health Services where the latter is the base. The research team completed this test, and the results are provided for all but one primary service category alternative, Educator Quality and Recruitment (see Exhibit D12). For this category, the sample of LEAs that had it as primary was too small ($n = 4$) to allow for the restricted binomial model.

As illustrated in Exhibit D12, for all service categories included in the test, the restricted model results are very similar in magnitude and significance across all covariates, importantly including the two key variables—the percentage of students who are economically disadvantaged and LEA efficiency. This does not point to an IIA violation and provides some reassurance that this potential source of bias is not a meaningful issue.

Exhibit D12. Results of the Main Analysis Multinomial Regression and a Series of Binomial Regressions Restricted to Mental Health Services and the Noted Alternative Category

Variable	Base	Restricted
Academic Supports		
Economically Disadvantaged Students (percent)	1.062*** (0.00795)	1.059*** (0.00840)
English Learners (percent)	0.966 (0.0213)	0.958 (0.0251)
Students with Disabilities (percent)	0.995 (0.0282)	1.018 (0.0326)
Non-White Students (percent)	0.993 (0.00806)	0.998 (0.00913)
Rural School Indicator	0.295* (0.180)	0.304 (0.205)
Suburban School Indicator	0.425 (0.209)	0.386 (0.210)
Town School Indicator	0.231* (0.145)	0.237* (0.166)
District-level CWIFT	0.00144* (0.00434)	0.000885 (0.00312)
School Enrollment (natural log)	1.021 (0.129)	1.090 (0.151)
Efficiency	0.975 (0.228)	1.008 (0.267)
Constant	10.28 (28.36)	7.380 (23.14)
Observations	759	469
Pseudo R-squared	0.199	0.413
Community and Family Engagement		
Economically Disadvantaged Students (percent)	0.988 (0.00960)	0.980 (0.0108)
English Learners (percent)	1.007 (0.0216)	0.999 (0.0233)

Variable	Base	Restricted
Students with Disabilities (percent)	1.022	1.057
	(0.0317)	(0.0399)
Non-White Students (percent)	1.007	1.014
	(0.0100)	(0.0111)
Rural School Indicator	0.274	0.271
	(0.195)	(0.201)
Suburban School Indicator	0.373	0.357
	(0.236)	(0.241)
Town School Indicator	0.279	0.291
	(0.211)	(0.224)
District-level CWIFT	0.337	0.208
	(1.108)	(0.713)
School Enrollment (natural log)	0.639**	0.638**
	(0.103)	(0.103)
Efficiency	0.537*	0.545*
	(0.143)	(0.155)
Constant	34.68	39.72
	(105.9)	(129.1)
Observations	759	409
Pseudo R-squared	0.199	0.111
Educator Quality and Recruitment		
Economically Disadvantaged Students (percent)	1.039	N/A
	(0.0524)	
English Learners (percent)	3.98e-14	N/A
	(7.69e-13)	
Students with Disabilities (percent)	0.771	N/A
	(0.137)	
Non-White Students (percent)	0.965	N/A
	(0.0453)	
Rural School Indicator	8.84e-11	N/A
	(8.41e-08)	
Suburban School Indicator	0.00520	N/A
	(0.0195)	
Town School Indicator	0.00627	N/A
	(0.0242)	
District-level CWIFT	1.09e-45	N/A
	(5.97e-44)	
School Enrollment (natural log)	1.037	N/A
	(1.707)	

Variable	Base	Restricted
Efficiency	0.0784	N/A
	(0.177)	
Constant	1.15352e+38*	N/A
	(4.91283e+39)	
Observations	759	N/A
Pseudo R-squared	0.199	N/A
Extended Day		
Economically Disadvantaged Students (percent)	1.050***	1.040***
	(0.00920)	(0.00988)
English Learners (percent)	1.008	1.013
	(0.0173)	(0.0171)
Students with Disabilities (percent)	0.971	0.990
	(0.0300)	(0.0334)
Non-White Students (percent)	1.011	1.013
	(0.00918)	(0.0100)
Rural School Indicator	1.346	1.295
	(0.974)	(1.004)
Suburban School Indicator	0.701	0.775
	(0.373)	(0.462)
Town School Indicator	0.760	0.681
	(0.582)	(0.546)
District-level CWIFT	0.0315	0.191
	(0.113)	(0.781)
School Enrollment (natural log)	0.692*	0.664*
	(0.109)	(0.113)
Efficiency	1.134	0.927
	(0.287)	(0.267)
Constant	3.737	1.167
	(12.56)	(4.475)
Observations	759	421
Pseudo R-squared	0.199	0.414
Instructional Tech/Blended Learning		
Economically Disadvantaged Students (percent)	1.042**	1.037*
	(0.0138)	(0.0154)
English Learners (percent)	1.021	1.029
	(0.0279)	(0.0364)
Students with Disabilities (percent)	1.025	1.046
	(0.0503)	(0.0591)

Variable	Base	Restricted
Non-White Students (percent)	0.965*	0.956*
	(0.0164)	(0.0212)
Rural School Indicator	0.0388**	0.0206**
	(0.0450)	(0.0273)
Suburban School Indicator	0.0792*	0.0532*
	(0.0817)	(0.0613)
Town School Indicator	0.0448**	0.0244**
	(0.0527)	(0.0320)
District-level CWIFT	0.00724	0.283
	(0.0410)	(1.765)
School Enrollment (natural log)	0.866	0.805
	(0.197)	(0.170)
Efficiency	1.245	0.988
	(0.501)	(0.446)
Constant	23.48	2.938
	(124.0)	(16.86)
Observations	760	358
Pseudo R-squared	0.199	0.258
Physical Health		
Economically Disadvantaged Students (percent)	0.992	0.994
	(0.00965)	(0.0101)
English Learners (percent)	0.957	0.957
	(0.0411)	(0.0373)
Students with Disabilities (percent)	0.962	0.952
	(0.0354)	(0.0369)
Non-White Students (percent)	1.014	1.015
	(0.0105)	(0.0112)
Rural School Indicator	0.639	0.788
	(0.489)	(0.605)
Suburban School Indicator	0.744	0.934
	(0.526)	(0.667)
Town School Indicator	0.612	0.740
	(0.480)	(0.575)
District-level CWIFT	0.000100**	0.000137**
	(0.000310)	(0.00042-)
School Enrollment (natural log)	1.271	1.179
	(0.213)	(0.195)
Efficiency	0.597	0.606
	(0.181)	(0.187)

Variable	Base	Restricted
Constant	349.8*	410.3*
	(989.6)	(1167.9)
Observations	759	425
Pseudo R-squared	0.199	0.036
School Climate		
Economically Disadvantaged Students (percent)	1.027	1.024
	(0.0181)	(0.0188)
English Learners (percent)	0.995	0.989
	(0.0797)	(0.0744)
Students with Disabilities (percent)	0.997	0.981
	(0.0766)	(0.0852)
Non-White Students (percent)	0.982	0.985
	(0.0199)	(0.0239)
Rural School Indicator	0.484	0.445
	(0.795)	(0.778)
Suburban School Indicator	1.180	1.438
	(1.636)	(2.165)
Town School Indicator	0.603	0.535
	(0.991)	(0.926)
District-level CWIFT	0.137	0.0841
	(1.075)	(0.711)
School Enrollment (natural log)	1.156	0.986
	(0.403)	(0.327)
Efficiency	0.272*	0.224*
	(0.171)	(0.161)
Constant	0.0270	0.171
	(0.198)	(1.331)
Observations	759	348
Pseudo R-squared	0.199	0.167
Targeted Support		
Economically Disadvantaged Students (percent)	1.012	0.994
	(0.0182)	(0.0218)
English Learners (percent)	1.031	1.044
	(0.0250)	(0.0323)
Students with Disabilities (percent)	0.890	0.980
	(0.0560)	(0.0828)
Non-White Students (percent)	1.025	1.024
	(0.0181)	(0.0222)
Rural School Indicator	1.606	1.443
	(2.077)	(2.203)

Variable	Base	Restricted
Suburban School Indicator	1.380	1.463
	(1.239)	(1.776)
Town School Indicator	0.000000291	0.000000188
	(0.000509)	(0.000404)
District-level CWIFT	0.00108	0.0307
	(0.00785)	(0.246)
School Enrollment (natural log)	0.761	0.649
	(0.240)	(0.205)
Efficiency	0.429	0.259*
	(0.210)	(0.178)
Constant	84.48	8.044
	(552.8)	(57.84)
Observations	759	353
Pseudo R-squared	0.199	0.320

Notes. Table displays relative risk ratio coefficients and standard errors from multinomial logistic regression of a categorical outcome representing a LEA’s primary service category on students who are economically disadvantaged and other listed covariates. Mental health is the base category for the outcome. Results are provided for the main study model labeled as “Base” and for series of restricted models for each category other than Mental Health Services labeled as “Restricted.” * $p < .05$, ** $p < .01$, *** $p < .001$. Source: Research team analysis of ODEW Survey, 2023, ODEW Report Card, Building Disaggregated Economically Disadvantaged 2022/23, ODEW Report Card, Building Details 2022/23, ODEW Report Card, District and School Contact Information 2022/23, NCES Comparable Wage Index for Teachers (CWIFT) 2021, and the study efficiency measure.

Additional Exhibits

The following exhibits provide additional exhibits relevant to the analyses in chapter 5. This includes summary statistics for variables included in the regression analyses of primary service categories and their full model results.

Exhibit D13. Summary Statistics of ODEW Survey Responses by Service Category and Analytic Groups—2022/23

Analytic group	Unduplicated count	Academic supports	Community and family engagement	Educator quality and recruitment	Extended day and extended year	Instructional technology or blended learning	Mental health services	Physical health services	School climate and safety	Targeted support for specific populations
Region 1	95	34 (36)	34 (36)	8 (8)	19 (20)	9 (10)	67 (71)	44 (46)	16 (17)	5 (5)
Region 2	32	7 (22)	14 (44)	5 (16)	9 (28)	4 (13)	22 (69)	11 (34)	8 (25)	2 (6)
Region 3	76	24 (32)	42 (55)	6 (8)	27 (36)	11 (15)	34 (45)	10 (13)	9 (12)	4 (5)
Region 4	15	5 (33)	5 (33)	0 (0)	3 (20)	0 (0)	15 (100)	5 (33)	2 (13)	4 (27)
Region 5	65	31 (48)	30 (46)	2 (3)	11 (17)	12 (19)	51 (79)	29 (45)	22 (34)	4 (6)
Region 6	47	20 (43)	10 (21)	3 (6)	11 (23)	6 (13)	42 (89)	23 (49)	13 (28)	1 (2)
Region 7	51	16 (31)	20 (39)	4 (8)	9 (18)	5 (10)	32 (63)	25 (49)	7 (14)	4 (8)
Region 8	48	18 (38)	12 (25)	3 (6)	5 (10)	8 (17)	32 (67)	17 (35)	9 (19)	4 (8)
Region 9	37	19 (51)	17 (46)	5 (14)	11 (30)	7 (19)	30 (81)	19 (51)	10 (27)	1 (3)
Region 10	76	34 (45)	28 (37)	6 (8)	18 (24)	12 (16)	60 (79)	25 (33)	19 (25)	8 (11)
Region 11	120	40 (33)	48 (40)	5 (4)	36 (30)	16 (13)	74 (62)	27 (23)	15 (13)	6 (5)
Region 12	46	21 (46)	17 (37)	5 (11)	6 (13)	12 (26)	35 (76)	27 (59)	11 (24)	5 (11)
Region 13	67	27 (40)	27 (40)	5 (8)	13 (19)	10 (15)	48 (72)	19 (28)	14 (21)	10 (15)
Region 14	17	10 (59)	4 (24)	1 (6)	3 (18)	0 (0)	16 (94)	12 (71)	5 (29)	5 (29)
Region 15	29	16 (55)	5 (17)	0 (0)	12 (41)	6 (21)	21 (72)	12 (41)	6 (21)	2 (7)
Region 16	22	17 (77)	9 (41)	1 (5)	5 (23)	8 (36)	15 (68)	9 (41)	8 (36)	4 (18)

Analytic group	Unduplicated count	Academic supports	Community and family engagement	Educator quality and recruitment	Extended day and extended year	Instructional technology or blended learning	Mental health services	Physical health services	School climate and safety	Targeted support for specific populations
1 st Quartile—percentage of students who are economically disadvantaged	218	56 (26)	57 (26)	16 (7)	32 (15)	23 (11)	187 (86)	79 (36)	29 (13)	15 (7)
2 nd Quartile—percentage of students who are economically disadvantaged	218	82 (38)	75 (34)	18 (8)	34 (16)	30 (14)	189 (87)	101 (46)	52 (24)	15 (7)
3 rd Quartile—percentage of students who are economically disadvantaged	205	103 (50)	90 (44)	15 (7)	51 (25)	39 (19)	132 (64)	92 (45)	55 (27)	24 (12)
4 th Quartile—percentage of students who are economically disadvantaged	202	98 (49)	100 (50)	10 (5)	81 (40)	34 (17)	86 (43)	42 (21)	38 (19)	15 (7)
City	199	88 (44)	105 (53)	13 (7)	76 (38)	40 (20)	80 (40)	37 (19)	33 (17)	13 (7)
Suburb	247	92 (37)	86 (35)	23 (9)	47 (19)	35 (14)	189 (77)	82 (33)	45 (18)	22 (9)
Town	120	53 (44)	47 (39)	6 (5)	24 (20)	19 (16)	89 (74)	61 (51)	29 (24)	6 (5)

Analytic group	Unduplicated count	Academic supports	Community and family engagement	Educator quality and recruitment	Extended day and extended year	Instructional technology or blended learning	Mental health services	Physical health services	School climate and safety	Targeted support for specific populations
Rural	277	106 (38)	84 (30)	17 (6)	51 (18)	32 (12)	236 (85)	134 (48)	67 (24)	28 (10)
1 st Quartile—LEA efficiency	189	88 (47)	84 (44)	16 (9)	50 (27)	37 (20)	109 (58)	57 (30)	47 (25)	20 (11)
2 nd Quartile—LEA efficiency	167	78 (47)	65 (39)	15 (9)	42 (25)	26 (16)	131 (78)	80 (48)	48 (29)	18 (11)
3 rd Quartile—LEA efficiency	196	79 (40)	62 (32)	11 (6)	28 (14)	21 (11)	159 (81)	87 (44)	42 (21)	18 (9)
4 th Quartile—LEA efficiency	208	60 (29)	60 (29)	14 (7)	52 (25)	27 (13)	173 (83)	82 (39)	27 (13)	10 (5)
Community	180	65 (36)	100 (56)	12 (7)	88 (49)	25 (14)	62 (34)	29 (16)	19 (11)	14 (8)
Dropout and recovery	70	41 (59)	34 (49)	2 (3)	3 (4)	12 (17)	24 (34)	6 (9)	12 (17)	1 (1)
STEM	7	0 (0)	0 (0)	0 (0)	3 (43)	4 (57)	7 (100)	4 (57)	0 (0)	0 (0)
Traditional	586	233 (40)	188 (32)	45 (8)	104 (18)	85 (15)	501 (86)	275 (47)	143 (24)	54 (9)
All groups	843	339 (40)	322 (38)	59 (7)	198 (23)	126 (15)	594 (70)	314 (37)	174 (21)	69 (8)

Note. This table displays the counts and percentages (in parentheses) of LEA respondents reporting at least one initiative for each service category by analytic groupings. Chi-square tests for independence suggest that reported services categories are statistically significantly different across categories for each of the analytic groups ($p < .001$). Source: Research team analysis of ODEW Survey, 2023, ODEW Report Card, Building Disaggregated Economically Disadvantaged 2022/23, ODEW Report Card, Building Details 2022/23, ODEW Report Card, District and School Contact Information 2022/23, NCES Comparable Wage Index for Teachers (CWIFT) 2021, and study efficiency measure.

Exhibit D14. Summary Statistics of ODEW Survey Respondents by Primary Service Category and Analytic Groups—2022/23

Analytic group	Unduplicated count	Academic supports	Community and family engagement	Educator quality and recruitment	Extended day and extended year	Instructional technology or blended learning	Mental health services	Physical health services	School climate and safety	Targeted support for specific populations
Region 1	95	9 (10)	12 (13)	0 (0)	8 (8)	0 (0)	43 (45)	18 (19)	2 (2)	3 (3)
Region 2	32	4 (13)	5 (16)	0 (0)	5 (16)	0 (0)	15 (47)	2 (6)	1 (3)	0 (0)
Region 3	76	15 (20)	12 (16)	0 (0)	20 (26)	4 (5)	19 (25)	4 (5)	0 (0)	2 (3)
Region 4	15	0 (0)	2 (13)	0 (0)	0 (0)	0 (0)	11 (73)	1 (7)	0 (0)	1 (7)
Region 5	65	18 (28)	5 (8)	0 (0)	6 (9)	3 (5)	25 (39)	5 (8)	3 (5)	0 (0)
Region 6	47	3 (6)	5 (11)	1 (2)	3 (6)	0 (0)	31 (66)	4 (9)	0 (0)	0 (0)
Region 7	51	5 (10)	6 (12)	1 (2)	6 (12)	0 (0)	20 (39)	12 (24)	1 (2)	0 (0)
Region 8	48	6 (13)	3 (6)	0 (0)	2 (4)	1 (2)	23 (48)	11 (23)	2 (4)	0 (0)
Region 9	37	9 (24)	2 (5)	1 (3)	4 (11)	0 (0)	14 (38)	7 (19)	0 (0)	0 (0)
Region 10	76	17 (22)	5 (7)	0 (0)	7 (9)	5 (7)	34 (45)	6 (8)	1 (1)	1 (1)
Region 11	120	23 (19)	14 (12)	0 (0)	25 (21)	4 (3)	40 (33)	6 (5)	2 (2)	6 (5)
Region 12	46	11 (24)	4 (9)	1 (2)	2 (4)	2 (4)	18 (39)	7 (15)	0 (0)	1 (2)
Region 13	67	12 (18)	7 (10)	0 (0)	8 (12)	3 (5)	33 (49)	3 (5)	0 (0)	1 (2)
Region 14	17	6 (35)	0 (0)	0 (0)	1 (6)	0 (0)	6 (35)	2 (12)	0 (0)	2 (12)
Region 15	29	7 (24)	0 (0)	0 (0)	8 (28)	2 (7)	11 (38)	1 (3)	0 (0)	0 (0)
Region 16	22	11 (50)	2 (9)	0 (0)	0 (0)	2 (9)	5 (23)	1 (5)	1 (5)	0 (0)
1 st Quartile—percentage of students who are economically disadvantaged	218	14 (6)	21 (10)	0 (0)	4 (2)	3 (1)	135 (62)	36 (17)	2 (1)	3 (1)

Analytic group	Unduplicated count	Academic supports	Community and family engagement	Educator quality and recruitment	Extended day and extended year	Instructional technology or blended learning	Mental health services	Physical health services	School climate and safety	Targeted support for specific populations
2 nd Quartile—percentage of students who are economically disadvantaged	218	10 (5)	22 (10)	0 (0)	7 (3)	6 (3)	138 (63)	30 (14)	4 (2)	1 (1)
3 rd Quartile—percentage of students who are economically disadvantaged	205	53 (26)	29 (14)	4 (2)	28 (14)	7 (3)	56 (27)	18 (9)	4 (2)	6 (3)
4 th Quartile—percentage of students who are economically disadvantaged	202	79 (39)	12 (6)	0 (0)	66 (33)	10 (5)	19 (9)	6 (3)	3 (2)	7 (4)
City	199	64 (32)	21 (11)	2 (1)	58 (29)	14 (7)	21 (11)	7 (4)	4 (2)	8 (4)
Suburb	247	39 (16)	25 (10)	1 (0)	20 (8)	4 (2)	119 (48)	30 (12)	4 (2)	5 (2)
Town	120	21 (18)	14 (12)	1 (1)	8 (7)	3 (3)	57 (48)	14 (12)	2 (2)	0 (0)
Rural	277	32 (12)	24 (9)	0 (0)	19 (7)	5 (2)	151 (55)	39 (14)	3 (1)	4 (1)
1 st Quartile—LEA efficiency	190	56 (30)	21 (11)	2 (1)	34 (18)	6 (3)	40 (21)	17 (9)	6 (3)	8 (4)
2 nd Quartile—LEA efficiency	190	37 (20)	12 (6)	1 (1)	19 (10)	5 (3)	84 (44)	26 (14)	3 (2)	3 (2)
3 rd Quartile—LEA efficiency	190	23 (12)	18 (10)	0 (0)	12 (6)	3 (2)	111 (58)	20 (11)	0 (0)	3 (2)

Analytic group	Unduplicated count	Academic supports	Community and family engagement	Educator quality and recruitment	Extended day and extended year	Instructional technology or blended learning	Mental health services	Physical health services	School climate and safety	Targeted support for specific populations
4 th Quartile—LEA efficiency	190	15 (8)	18 (10)	1 (1)	18 (10)	6 (3)	105 (55)	25 (13)	1 (1)	1 (1)
Community	180	47 (26)	16 (9)	1 (1)	74 (41)	9 (5)	17 (9)	4 (2)	3 (2)	9 (5)
Dropout and recovery	70	32 (46)	19 (27)	1 (1)	3 (4)	3 (4)	8 (11)	1 (1)	2 (3)	1 (1)
STEM	7	0 (0)	0 (0)	0 (0)	0 (0)	3 (43)	4 (57)	0 (0)	0 (0)	0 (0)
Traditional	586	77 (13)	49 (8)	2 (0)	28 (5)	11 (2)	319 (54)	85 (15)	8 (1)	7 (1)
All groups	843	843	156 (19)	84 (10)	4 (0)	105 (12)	26 (3)	348 (41)	90 (11)	13 (2)

Note. This table displays the counts and percentages (in parentheses) of LEA respondents that have each service category as primary (i.e., the service category makes up the largest share of their DPIA/SWSF initiative spending) by analytic groupings. Chi-square tests for independence suggest that primary service categories are statistically significantly different across categories for each of the analytic groups ($p < .001$). Source: Research team analysis of ODEW Survey, 2023, ODEW Report Card, Building Disaggregated Economically Disadvantaged 2022/23, ODEW Report Card, Building Details 2022/23, ODEW Report Card, District and School Contact Information 2022/23, NCES Comparable Wage Index for Teachers (CWIFT) 2021, and study efficiency measure.

Exhibit D15. Summary Statistics of ODEW Survey Share of Spending by Service Category and Analytic Groups—2022/23

Service category	Analytic group	Count	Mean	Standard deviation	Median	Minimum	Maximum
Academic Supports	1 st Quartile—percentage of students who are economically disadvantaged	218	6	18	0	0	99
	2 nd Quartile—percentage of students who are economically disadvantaged	218	10	16	0	0	70
	3 rd Quartile—percentage of students who are economically disadvantaged	205	21	29	0	0	100

Service category	Analytic group	Count	Mean	Standard deviation	Median	Minimum	Maximum
	4 th Quartile—percentage of students who are economically disadvantaged	202	31	36	0	0	100
Community and Family Engagement	1 st Quartile—percentage of students who are economically disadvantaged	218	11	25	0	0	100
	2 nd Quartile—percentage of students who are economically disadvantaged	218	12	24	0	0	100
	3 rd Quartile—percentage of students who are economically disadvantaged	205	15	28	0	0	100
	4 th Quartile—percentage of students who are economically disadvantaged	202	14	23	0	0	100
Extended Day and Extended Year	1 st Quartile—percentage of students who are economically disadvantaged	218	2	10	0	0	100
	2 nd Quartile—percentage of students who are economically disadvantaged	218	4	15	0	0	100
	3 rd Quartile—percentage of students who are economically disadvantaged	205	12	27	0	0	100
	4 th Quartile—percentage of students who are economically disadvantaged	202	27	37	0	0	100
Mental Health Services	1 st Quartile—percentage of students who are economically disadvantaged	218	58	39	68	0	100
	2 nd Quartile—percentage of students who are economically disadvantaged	218	51	34	53	0	100
	3 rd Quartile—percentage of students who are economically disadvantaged	205	28	32	19	0	100
	4 th Quartile—percentage of students who are economically disadvantaged	202	13	25	0	0	100

Service category	Analytic group	Count	Mean	Standard deviation	Median	Minimum	Maximum
Physical Health Services	1 st Quartile—percentage of students who are economically disadvantaged	218	16	27	0	0	100
	2 nd Quartile—percentage of students who are economically disadvantaged	218	14	22	0	0	100
	3 rd Quartile—percentage of students who are economically disadvantaged	205	11	20	0	0	100
	4 th Quartile—percentage of students who are economically disadvantaged	202	4	15	0	0	100
Other	1 st Quartile—percentage of students who are economically disadvantaged	218	7	16	0	0	100
	2 nd Quartile—percentage of students who are economically disadvantaged	218	9	15	0	0	73
	3 rd Quartile—percentage of students who are economically disadvantaged	205	13	23	0	0	100
	4 th Quartile—percentage of students who are economically disadvantaged	202	12	24	0	0	100
Academic Supports	1 st Quartile—LEA efficiency	189	25	33	0	0	100
	2 nd Quartile—LEA efficiency	167	18	26	0	0	100
	3 rd Quartile—LEA efficiency	196	14	23	0	0	100
	4 th Quartile—LEA efficiency	208	8	18	0	0	92
Community and Family Engagement	1 st Quartile—LEA efficiency	189	14	25	0	0	100
	2 nd Quartile—LEA efficiency	167	11	21	0	0	100
	3 rd Quartile—LEA efficiency	196	10	23	0	0	100
	4 th Quartile—LEA efficiency	208	11	24	0	0	100
Extended Day and Extended Year	1 st Quartile—LEA efficiency	189	15	31	0	0	100

Service category	Analytic group	Count	Mean	Standard deviation	Median	Minimum	Maximum
	2 nd Quartile—LEA efficiency	167	8	21	0	0	100
	3 rd Quartile—LEA efficiency	196	6	20	0	0	100
	4 th Quartile—LEA efficiency	208	9	24	0	0	100
Mental Health Services	1 st Quartile—LEA efficiency	189	23	31	7	0	100
	2 nd Quartile—LEA efficiency	167	39	36	29	0	100
	3 rd Quartile—LEA efficiency	196	48	37	48	0	100
	4 th Quartile—LEA efficiency	208	52	38	50	0	100
Physical Health Services	1 st Quartile—LEA efficiency	189	8	20	0	0	100
	2 nd Quartile—LEA efficiency	167	13	21	0	0	100
	3 rd Quartile—LEA efficiency	196	14	24	0	0	100
	4 th Quartile—LEA efficiency	208	14	24	0	0	100
Other	1 st Quartile—LEA efficiency	189	15	26	0	0	100
	2 nd Quartile—LEA efficiency	167	11	19	0	0	100
	3 rd Quartile—LEA efficiency	196	8	15	0	0	100
	4 th Quartile—LEA efficiency	208	6	14	0	0	82
Academic Supports	All Groups	843	17	27	0	0	100
Community and Family Engagement		843	13	25	0	0	100
Extended Day and Extended Year		843	11	26	0	0	100
Mental Health Services		843	38	37	26	0	100
Physical Health Services		843	11	22	0	0	100
Other		843	10	20	0	0	100

Note. This table displays the descriptive statistics of the average share of DPIA/SWSF initiative spending that top 5 largest spending categories and all other categories make up, within each grouping and overall. Source: Research team analysis of ODEW Survey, 2023, ODEW Report Card, Building Disaggregated Economically Disadvantaged 2022/23, ODEW Report Card, Building Details 2022/23, ODEW Report Card, District and School Contact Information 2022/23, NCES Comparable Wage Index for Teachers (CWIFT) 2021, and study efficiency measure.

Exhibit D16. Binomial Regression Analysis of Mental Health Services Results—2022/23

Variable	Mental health services is the primary category
Students who are economically disadvantaged (percent)	0.975*** (0.00491)
LEA-level CWIFT	196.3** (392.8)
English learners (percent)	1.005 (0.0133)
Students with disabilities (percent)	1.024 (0.0231)
Non-white students (percent)	0.999 (0.00606)
Suburban LEA indicator	1.423 (0.657)
Town LEA indicator	1.997 (1.067)
Rural LEA indicator	1.666 (0.889)
Traditional LEA indicator	2.871 (1.588)
LEA enrollment (natural log)	0.980 (0.127)
LEA efficiency	1.323 (0.233)
Constant	0.00668** (0.0126)
Observations	759
Pseudo R-squared	0.191

Note. Table displays odds ratio coefficients and standard errors from binary logistic regression of a binary indicator of mental health as primary service category on students who are economically disadvantaged and other listed covariates. ** $p < .01$, *** $p < .001$. Source: Research team analysis of ODEW Survey, 2023, ODEW Report Card, Building Disaggregated Economically Disadvantaged 2022/23, ODEW Report Card, Building Details 2022/23, ODEW Report Card, District and School Contact Information 2022/23, NCES Comparable Wage Index for Teachers (CWIFT) 2021, and study efficiency.

Exhibit D17. Multinomial Regression Analysis of Mental Health Services Results—2022/23

Variable	Academic supports	Community and family engagement	Educator quality and recruitment	Extended day and extended year	Instructional technology or blended learning	Physical health services	School climate and safety	Targeted support for specific populations
Economically disadvantaged students (percent)	1.062***	0.988	1.039	1.050***	1.042*	0.992	1.027	1.012
	(0.00823)	(0.00834)	(0.0524)	(0.00966)	(0.0167)	(0.00890)	(0.0191)	(0.0146)
English learners (percent)	0.966	1.007	3.98e-14**	1.008	1.021	0.957	0.995	1.031
	(0.0195)	(0.0214)	(4.46e-13)	(0.0187)	(0.0222)	(0.0460)	(0.0736)	(0.0230)
Students with disabilities (percent)	0.995	1.022	0.771	0.971	1.025	0.962	0.997	0.890
	(0.0322)	(0.0289)	(0.111)	(0.0341)	(0.0550)	(0.0336)	(0.0554)	(0.0586)
Non-White students (percent)	0.993	1.007	0.965	1.011	0.965**	1.014	0.982	1.025
	(0.00791)	(0.00976)	(0.0283)	(0.00988)	(0.0128)	(0.00948)	(0.0139)	(0.0171)
Rural LEA indicator	0.295*	0.274	8.84e-11***	1.346	0.0388**	0.639	0.484	1.606
	(0.183)	(0.187)	(2.34e-10)	(0.966)	(0.0450)	(0.519)	(0.603)	(1.781)
Suburban LEA indicator	0.425	0.373	0.00520*	0.701	0.0792*	0.744	1.180	1.380
	(0.215)	(0.219)	(0.0115)	(0.359)	(0.0875)	(0.556)	(1.246)	(1.180)
Town LEA indicator	0.231*	0.279	0.00627**	0.760	0.0448**	0.612	0.603	0.000000281***
	(0.149)	(0.203)	(0.0123)	(0.591)	(0.0497)	(0.510)	(0.710)	(0.000000279)
LEA-level CWIFT	0.00144*	0.337	1.09e-45**	0.0315	0.00724	0.000100**	0.137	0.00108
	(0.00413)	(1.084)	(3.54e-44)	(0.118)	(0.0392)	(0.000311)	(0.927)	(0.00828)
LEA enrollment (natural log)	1.021	0.639**	1.037	0.692*	0.866	1.271	1.156	0.761
	(0.140)	(0.0941)	(1.114)	(0.102)	(0.251)	(0.215)	(0.289)	(0.240)

Variable	Academic supports	Community and family engagement	Educator quality and recruitment	Extended day and extended year	Instructional technology or blended learning	Physical health services	School climate and safety	Targeted support for specific populations
LEA efficiency	0.975 (0.242)	0.537* (0.132)	0.0784* (0.0925)	1.004 (0.295)	1.245 (0.450)	0.597 (0.185)	0.272* (0.145)	0.429* (0.143)
Constant	10.28 (27.44)	34.68 (103.8)	1.91535e+38** (3.34476e+39)	3.737 (12.50)	23.48 (134.5)	349.8* (1015.2)	0.0270 (0.165)	84.48 (534.4)
Observations	759	759	759	759	759	759	759	759
Pseudo R-squared	0.199	0.199	0.199	0.199	0.199	0.199	0.199	0.199

Note. Table displays relative risk ratio coefficients and standard errors from multinomial logistic regression of a categorical outcome representing a LEA’s primary service category on students who are economically disadvantaged and other listed covariates. Mental health is the base category for the outcome. * $p < .05$, ** $p < .01$, *** $p < .001$. Source: Research team analysis of ODEW Survey, 2023, ODEW Report Card, Building Disaggregated Economically Disadvantaged 2022/23, ODEW Report Card, Building Details 2022/23, ODEW Report Card, District and School Contact Information 2022/23, NCES Comparable Wage Index for Teachers (CWIFT) 2021, and study efficiency.

The following exhibits present summary data from the Project Survey relevant to items regarding personnel and non-personnel resources supporting services for students who are economically disadvantaged.

Exhibit D18. Summary Statistics of Project Survey Share of Respondents by Personnel Role Categories and Analytic Groups—2022/23

Analytic group	Subgroup	Unduplicated count	Instructional role	Related services roles	Mental or physical health	District administrators	School administrators	Other school roles	Other roles	
Region	Region 1	9	8 (89)	5 (56)	7 (78)	8 (89)	8 (89)	5 (56)	3 (33)	
	Region 2	3	2 (67)	2 (67)	3 (100)	2 (67)	2 (67)	2 (67)	2 (67)	
	Region 3	6	6 (100)	1 (17)	4 (67)	4 (67)	5 (83)	1 (17)	1 (17)	
	Region 4	1	1 (100)	1 (100)	1 (100)	1 (100)	1 (100)	1 (100)	1 (100)	
	Region 5	7	7 (100)	6 (86)	7 (100)	6 (86)	7 (100)	2 (29)	1 (14)	
	Region 6	4	4 (100)	4 (100)	4 (100)	4 (100)	4 (100)	3 (75)	2 (50)	
	Region 7	5	5 (100)	5 (100)	5 (100)	5 (100)	5 (100)	4 (80)	2 (40)	
	Region 8	7	7 (100)	6 (86)	7 (100)	7 (100)	6 (86)	3 (43)	1 (14)	
	Region 9	5	5 (100)	5 (100)	5 (100)	5 (100)	5 (100)	4 (80)	2 (40)	
	Region 10	4	4 (100)	4 (100)	4 (100)	4 (100)	3 (75)	4 (100)	3 (75)	2 (50)
	Region 11	10	10 (100)	8 (80)	8 (80)	8 (80)	8 (80)	9 (90)	5 (50)	3 (30)
	Region 12	4	4 (100)	4 (100)	4 (100)	4 (100)	4 (100)	4 (100)	1 (25)	0 (0)
	Region 13	10	9 (90)	8 (80)	10 (100)	10 (100)	10 (100)	10 (100)	6 (60)	4 (40)
	Region 14	3	3 (100)	3 (100)	3 (100)	3 (100)	3 (100)	3 (100)	2 (67)	1 (33)
	Region 15	6	6 (100)	6 (100)	6 (100)	5 (83)	6 (100)	6 (100)	3 (50)	2 (33)
	Region 16	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Percentage of Students who are Economically Disadvantaged	1 st Quartile	21	19 (91)	16 (76)	20 (95)	17 (81)	19 (91)	10 (48)	8 (38)	
	2 nd Quartile	24	23 (96)	20 (83)	22 (92)	22 (92)	22 (92)	13 (54)	8 (33)	
	3 rd Quartile	26	26 (100)	22 (85)	24 (92)	25 (96)	26 (100)	17 (65)	6 (23)	
	4 th Quartile	13	13 (100)	10 (77)	11 (85)	12 (92)	12 (92)	5 (39)	5 (39)	

Analytic group	Subgroup	Unduplicated count	Instructional role	Related services roles	Mental or physical health	District administrators	School administrators	Other school roles	Other roles
LEA Efficiency	1 st Quartile	21	21 (100)	17 (81)	19 (91)	20 (95)	19 (91)	11 (52)	6 (29)
	2 nd Quartile	20	19 (95)	18 (90)	19 (95)	19 (95)	19 (95)	13 (65)	5 (25)
	3 rd Quartile	20	20 (100)	16 (80)	18 (90)	17 (85)	19 (95)	11 (55)	7 (35)
	4 th Quartile	20	18 (90)	16 (80)	20 (100)	18 (90)	19 (95)	10 (50)	7 (35)
Locale	City	8	8 (100)	6 (75)	7 (88)	7 (88)	8 (100)	2 (25)	4 (50)
	Town	14	13 (93)	12 (86)	12 (86)	13 (93)	13 (93)	7 (50)	3 (21)
	Suburb	39	37 (95)	30 (77)	37 (95)	35 (90)	36 (92)	24 (62)	13 (33)
	Rural	23	23 (100)	20 (87)	21 (91)	21 (91)	22 (96)	12 (52)	7 (30)
LEA Type	Traditional LEAs	76	73 (96)	65 (86)	72 (95)	69 (91)	71 (93)	44 (58)	23 (30)
	Community School LEAs	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Dropout and Recovery School LEAs	7	7 (100)	3 (43)	4 (57)	6 (86)	7 (100)	1 (14)	4 (57)
	STEM School LEAs	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
All	All Groups	84	81 (96)	68 (81)	77 (92)	76 (90)	79 (94)	45 (54)	27 (32)

Note. This table displays counts and percentages (in parentheses) of LEA respondents who indicate that a personnel role supports programming for students who are economically disadvantaged, overall, and by analytic groupings. Source: Research team analysis of Project Survey, 2023/24, ODEW Report Card, Building Disaggregated Economically Disadvantaged 2022/23, ODEW Report Card, Building Details 2022/23, ODEW Report Card, District and School Contact Information 2022/23, NCES Comparable Wage Index for Teachers (CWIFT) 2021, and study efficiency.

Exhibit D19. Summary Statistics of Project Survey Share of Respondents by Non-personnel Role Categories and Analytic Groups—2022/23

Analytic group	Subgroup	Unduplicated count	Educational equipment or technology	Educational software	Other resource	Specialized facilities
State Support Team (SST) Region	Region 1	9	7 (78)	6 (67)	0 (0)	4 (44)
	Region 2	3	3 (100)	3 (100)	0 (0)	2 (67)
	Region 3	6	5 (83)	4 (67)	0 (0)	3 (50)
	Region 4	1	1 (100)	1 (100)	0 (0)	0 (0)
	Region 5	7	5 (71)	5 (71)	0 (0)	3 (43)
	Region 6	4	2 (50)	1 (25)	0 (0)	0 (0)
	Region 7	5	5 (100)	5 (100)	0 (0)	1 (20)
	Region 8	7	5 (71)	3 (43)	0 (0)	1 (14)
	Region 9	5	3 (60)	3 (60)	0 (0)	3 (60)
	Region 10	4	3 (75)	3 (75)	0 (0)	2 (50)
	Region 11	10	6 (60)	7 (70)	0 (0)	4 (40)
	Region 12	4	1 (25)	1 (25)	0 (0)	1 (25)
	Region 13	10	6 (60)	5 (50)	0 (0)	1 (10)
	Region 14	3	3 (100)	2 (67)	0 (0)	2 (67)
	Region 15	6	4 (67)	4 (67)	0 (0)	3 (50)
	Region 16	0	0 (0)	0 (0)	0 (0)	0 (0)
Percentage of Students who are Economically Disadvantaged	1 st Quartile	21	13 (62)	13 (62)	0 (0)	3 (14)
	2 nd Quartile	24	17 (71)	13 (54)	0 (0)	10 (42)
	3 rd Quartile	26	17 (65)	16 (62)	0 (0)	10 (39)
	4 th Quartile	13	12 (92)	11 (85)	0 (0)	7 (54)

Analytic group	Subgroup	Unduplicated count	Educational equipment or technology	Educational software	Other resource	Specialized facilities
LEA Efficiency	1 st Quartile	21	17 (81)	14 (67)	0 (0)	8 (38)
	2 nd Quartile	20	13 (65)	13 (65)	0 (0)	9 (45)
	3 rd Quartile	20	12 (60)	11 (55)	0 (0)	4 (20)
	4 th Quartile	20	14 (70)	13 (65)	0 (0)	8 (40)
Locale	City	8	6 (75)	6 (75)	0 (0)	5 (63)
	Suburb	39	29 (74)	26 (67)	0 (0)	16 (41)
	Town	14	9 (64)	8 (57)	0 (0)	2 (14)
	Rural	23	15 (65)	13 (57)	0 (0)	7 (30)
LEA Type	Traditional LEAs	76	52 (68)	47 (62)	0 (0)	26 (34)
	Community School LEAs	0	0 (0)	0 (0)	0 (0)	0 (0)
	Dropout and Recovery School LEAs	7	7 (100)	6 (86)	0 (0)	4 (57)
	STEM School LEAs	0	0 (0)	0 (0)	0 (0)	0 (0)
All	All Groups	84	59 (70)	53 (63)	0 (0)	30 (36)

Note. This table displays counts and percentages (in parentheses) of LEA respondents who indicate that a specific non-personnel resource supports programming for students who are economically disadvantaged, overall, and by analytic groupings. Source: Research team analysis of Project Survey, 2023/24, ODEW Report Card, Building Disaggregated Economically Disadvantaged 2022/23, ODEW Report Card, Building Details 2022/23, ODEW Report Card, District and School Contact Information 2022/23, NCES Comparable Wage Index for Teachers (CWIFT) 2021, and study efficiency.

Appendix E. Workshop Documents

Introduction

You have been selected to serve on one of eight professional judgment panels (PJPs) that will inform recommendations concerning state funding policy for economically disadvantaged (ED) students. You have been nominated and selected to serve on one of these PJPs because of your unique knowledge, skills, and perspective as an Ohio educator. Each PJP will be asked to carry out a set of tasks over the course of five 2-hour virtual meetings.

The purpose of this document is to provide a general overview of the purpose of PJP meetings, the nature of the activities, the assumptions to be made in your work, and the resources you will have access to in order to accomplish the activities.

Statement of Purpose

The ultimate purpose of this work is to help us estimate the cost of providing an *adequate* education for ED students in Ohio. There are four components required to achieve this objective:

1. Define adequacy. First, we are providing the PJPs with a *Goals Statement* (shown in the next section) that provides the definition of an “adequate education.” The *Goals Statement* incorporates state accountability measures described in Every Student Succeeds Act (ESSA) and Ohio’s Strategic Plan for Education (2019-2024).
2. Design programs. Second, we are asking each PJP to work independently to design prototype educational programs for a series of hypothetical public elementary, middle, and high schools that, in the professional judgment of the panel members, will provide an adequate opportunity for students in schools with varying demographics to have access to the learning opportunities specified in the *Goals Statement*.
3. Specify resources. Third, each PJP will be asked to specify the resources (personnel and non-personnel) necessary to efficiently deliver the “adequate” educational program designs they have developed.
4. Estimate costs. Fourth, the AIR research team will use the information provided by each PJP to estimate the determine the cost to deliver an “adequate” educational program in each public K-12 school and district in the state.

The charge of the PJP’s is to complete components 2 and 3, above. Please note that we are **not** asking PJPs to create a “one size fits all” model that is expected to be implemented in all Ohio public schools. Rather, we are simply asking panelists to design instructional programs and specify the resources that they believe will deliver the desired results as ***efficiently as possible***

(i.e., at the lowest possible cost to taxpayers). These program designs and resource specifications provide a basis from which to estimate the costs of achieving the goals and to inform potential modification of the existing school funding system.

Goals Statement

To determine what an adequate education is, it is important to define the educational goals for students in Ohio. Below is the Goals Statement that should serve as the objective of the programs designed by each PJP.

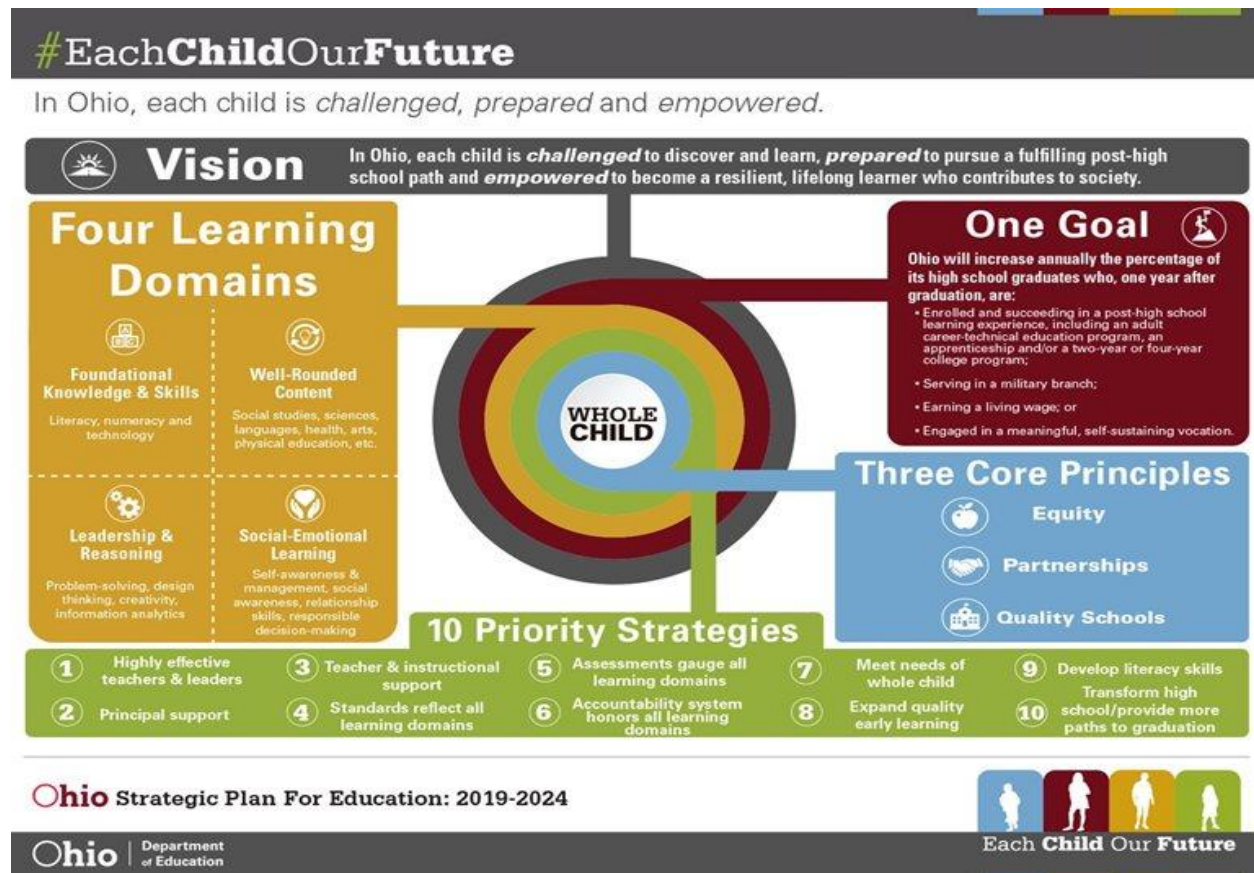
The work of the PJP will be to identify the program design (evidence-based best practices) and resource specifications necessary to achieving the following:

Meet the needs of the whole child, which is an opportunity to ensure positive and meaningful educational experiences for students who are economically disadvantaged that will lead to academic and post-secondary success.

Strategic Plan

PJP work will be further guided by the detailed goal, learning domains, core principles and priority strategies of the Ohio Strategic Plan, [*Each Child, Our Future*](#), summarized in Exhibit E1 below.

Exhibit E1. Ohio Strategic Plan, 2019-2024



Performance Goals

In Ohio's Every Student Succeeds Act (ESSA) [plan](#), the State established goals for academic performance that it perceived to be ambitious but attainable. In 2020-21, Ohio modified its' goals using the 2020-21 data as a baseline year to account for impacts of the COVID-19 pandemic on the educational system. These changes were based on stakeholder input and on historical performance. It includes goals for improved academic achievement in English Language Arts and Mathematics for all students and for each subgroup of students. The goals also include a measure of academic attainment and a state-developed measure of chronic absenteeism. The state set its long-term goals to ensure students are equipped for lifelong learning and success after leaving high school. Ohio proposed to set its long-term timeline for improvement goals at 10 years, ending in school year 2030-2031.

In Exhibits E2-E5 below, the data represents the number of points earned out of a possible 120 points, not percentage of points earned. For all students, the [interim progress targets](#) are established by dividing the difference between the long-term goal and the 2020-21 baseline by 10 and increasing the prior year's benchmark by that amount to provide for consistent annual

increases. For subgroups, such as economically disadvantaged students, the interim progress targets are established by subtracting the 2020-21 baseline from 100, multiplying the difference by 0.5, and dividing that number by 10. Annual goals for graduation rates and chronic absenteeism are calculated using a similar method.

Exhibit E2. English Language Arts Performance Index Score (Grade 3-8 ELA and ELA II)

	2020-	2021-	2022-	2023-	2024-	2025-	2026-	2027-	2028-	2029-	2030-
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
All Students	76.2	78.6	80.9	83.3	85.7	88.1	90.5	92.9	95.2	97.6	100.0
Economically Disadvantaged	62.3	64.2	66.1	68.0	69.9	71.8	73.63	75.5	77.4	79.3	81.2

Exhibit E3. Mathematics Performance Index Score (Grades 3-8 Math, Algebra I, Geometry, Integrated Math I, and Integrated Math II)

	2020-	2021-	2022-	2023-	2024-	2025-	2026-	2027-	2028-	2029-	2030-
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
All Students	67.9	71.1	74.3	77.5	80.8	84.0	87.2	90.4	93.6	96.8	100.0
Economically Disadvantaged	52.8	55.1	57.5	59.8	62.2	64.6	66.9	69.3	71.7	74.0	76.3

Exhibit E4. Four Year Cohort Graduation Rate (Baseline = Class of 2020)

	2020-	2021-	2022-	2023-	2024-	2025-	2026-	2027-	2028-	2029-	2030-
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
All Students	87.2	88.1	89.1	90.0	90.9	91.9	92.8	93.7	94.6	95.6	96.5
Economically Disadvantaged	78.4	79.3	80.2	81.1	82.0	82.9	83.8	84.7	85.6	86.6	87.5

Exhibit E5. State Measures of School Quality and Student Success (Chronic Absenteeism Percentage)

	2020-	2021-	2022-	2023-	2024-	2025-	2026-	2027-	2028-	2029-	2030-
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
All Students	24.0	22.1	20.2	18.3	16.4	14.5	12.6	10.7	8.8	6.9	5.0
Economically Disadvantaged	37.5	34.9	32.4	29.8	27.3	24.7	22.1	19.6	17.0	14.5	11.9

Content Area Learning Standards

Ohio's Department of Education and Workforce (DEW) have put together learning standards that explain the knowledge and skills Ohio students should know and be able to do in pre-kindergarten through grade 12. Ohio measures the performance of its schools based on how well students are progressing in gaining the knowledge and skills within the learning standards. Below is a list of learning standards by content area:

- [English Language Arts](#)
- [Financial Literacy](#)
- [Fine Arts](#)
- [Health Education](#)
- [Mathematics](#)
- [Physical Education](#)
- [Science](#)
- [Social Studies](#)
- [Technology](#)
- [Computer Science](#)
- [World Languages](#)
- [Social and Emotional](#)
- [Early Learning and Development](#)
- [Ohio English Language Proficiency \(ELP\)](#)
- [Extended Standards](#)

PJP Activities

We are asking each professional judgment panel to carry out the following two activities:

1. **Design an instructional program.** Each panel will be responsible for designing coherent instructional program prototypes at the elementary, middle, and high school levels that meet the framework of the indicators and will allow ED students in Ohio to reach the state's goals laid out in the *Goals Statement*:
 - a. The programs should be consistent with the underlying **Task Assumptions** mentioned below.
 - b. The programs should allow schools to meet the goals laid out in the **Goals Statement** above, which includes both meeting Ohio's performance standards and providing access to its content standards.

Importantly, the programs should be designed so that they are capable of providing ED students at the school the opportunity to achieve target performance levels.

The instructional program designs will be entered as narrative into a Word document called the **Program Design Document** included below.

2. **Specify resources to deliver programs.** With your programs design in mind, we are asking each panel to delineate the specific resources and services necessary to deliver the prototype programs in a series of hypothetical elementary, middle, and high schools representative of the varying needs found in Ohio public schools. Each hypothetical school defined by specific grade levels served (elementary, middle and high) and combination of need (poverty⁵ levels) represents a different task (these are described in detail below).

When designing programs and specifying resources, we ask each panel to specify the **most efficient** combinations of various resources to implement the **best practices** you believe necessary to **achieve the desired results**. Ideally, the program design and corresponding resource specifications generated by your professional judgment should be supported by research evidence and reasonable (i.e., could be realistically implemented by competent staff provided sufficient funding were available). Specifically, we ask that panelists keep the acronym **GEER** in mind when designing their programs and specifying the resource necessary to support the program designs:

- **Goals** – Will your program design achieve the outcomes listed in the *Goals Statement*?
- **Evidence** – Is there any evidence supporting your program designs and resource specifications?
- **Efficient** – Are your program designs and resource specifications efficient (i.e., will they achieve the intended outcomes at a minimum cost)?
- **Realistic** – Could your program designs and resource specifications realistically be implemented by competent staff if sufficient funding were made available?

Program Design

The program design should be one that you would reasonably expect to be adopted and funded by a school board comprised of knowledgeable, well-intentioned individuals and designed to meet the needs of the local communities. In each of the major tasks we ask you to carry out, the initial activity is to describe the nature of the instructional program that you believe is needed at the elementary, middle, and high school levels to allow schools to meet the state instructional goals. As instructional programs can be defined in a myriad of ways, the following list (Exhibit E6) is intended to provide you with the types of components that should be considered as you design your program.

⁵ Ohio Department of Education and Workforce refers to refers to the percent of students in poverty in school districts as Economically Disadvantaged. [EMIS Manual, 2024](#)

Exhibit E6. Program Design Components to Consider

- Core Instructional Program (e.g., Regular Classrooms, Resource Teachers, and Subject Matter Specialists)
 - English Learner Program
 - Special Education Program
 - Instructional and Pupil Support Services
 - Professional Development Services
 - Athletics Program (for Middle and High Schools)
 - Extended Time (After-School and/or Summer) Programs
 - Materials, Supplies, and Technology (Non-Personnel)
 - Other Strategies for Delivering Services
-

Best Practices in Designing Programs and Specifying Resources

Use your professional judgment. With the exception of the constraints imposed by these instructions, you are free to configure your programs in any way that you feel confident will achieve the desired results. The programs should be based on your best professional judgment and any high-quality research.⁶ Your program design should be practical and have a reasonable chance of being implemented successfully by competent educators.

Use resources efficiently. As you proceed through the assigned tasks and activities, we ask you to specify the best combinations of various resources that you believe are necessary to achieve the desired results at minimum cost. You need to be mindful that the resources you allocate will be financed by tax revenues collected primarily from the citizens of Ohio. To this end, we want to ensure that resources are used in the most efficient way possible to reach the specified goals.

Work from design to specification. It is important to design your program first. From our experience working with other educators on similar projects, the most effective groups first decide the nature of the program they would provide, describe the comprehensive program through a narrative program design (i.e., a *Program Design Document*), and then proceed with staffing the program and allocating resources accordingly. For example, desired class size should be determined in the program design document prior to specifying quantities of teaching staff.

⁶ We have included with these instructions a copy of expert brief (*Essential Elements for Successful Schools: Expert Briefs on the Essential Elements of Successful Schools Serving At-Risk Students, English Learners, Students with Disabilities and Students in Rural Schools*) written by a nationally recognized group of scholars and practitioners. These papers were intended to provide a balanced overview of relevant research on implementation and policy related to at-risk student populations.

Guiding Assumptions

The following assumptions should guide your deliberations throughout the PJP program design and resource specification process. This list is by no means exhaustive, and we encourage panels to document any additional assumptions or questions in the program design document that you will be completing.

1. **Student demographics and needs.** Assume that the student population in each hypothetical school reflects the demographic and need characteristics provided in the task instructions below.
2. **Personnel qualifications.** Assume that all instructors are state-certified in the subject areas that they are teaching, other personnel requiring certifications or licenses have these, and that salaries are adequate to attract and retain certified faculty and staff. You will be asked to provide your judgment on the appropriate mixture of Early Career and Experienced staff.
3. **School facilities.** Facilities are in place, and funding for facilities improvements is not part of these tasks. If, however, the program you are designing would require any major changes in the current general state of facilities in a district, please note what those changes would be in the program design document.
4. **Maintenance and operations.** Ongoing facilities maintenance and operations are considered a district expense, and we will make appropriate estimates from separate analyses to add these to the school-level costs estimated from your program specifications.
5. **Instructional supplies, equipment (including educational technology), and textbooks.** Assume that the program you are designing is for an existing school that has the basic amount of supplies, equipment, and textbooks that is typical of Ohio schools. We will provide you with an estimate of the annual per-pupil spending on these non-personnel resources in your worksheets and ask you to specify **changes or additions to current levels of expenditure for instructional supplies, materials, and textbooks** you believe to be appropriate. However, if you do so, you must describe how these changes will contribute to the specified outcomes.
6. **Student activities, athletics and enrichment.** Assume that the school you are designing has access to sufficient resources to devote non-personnel spending to student activities that are typical of Ohio schools. Here again, we will provide you with estimates of this amount in your worksheets and ask you to suggest **changes or additions to current expenditures on student activities**. Again, if you do so, you must describe how these changes will contribute to the specified outcomes.
7. **Special education services.** Assume the statewide average distribution of all special education students with respect to disability and severity across the district unless

otherwise instructed. Based on your professional judgment of what types of special education students should be served in regular classrooms and what types of services should be provided at neighborhood schools, you will be asked to design appropriate special education instructional programs at each schooling level (i.e., elementary, middle, high).

8. **Central district administration.** There is no need for the panels to address central district administration expenditures, as these costs will be estimated separately by the research team.
9. **Home-to-school transportation services.** There is also no need for the panels to address home-to-school transportation services. Home-to-school transportation cost estimates are beyond the scope of the present study. If, however, the program you are designing would require any major changes in the current level of transportation services typically offered in Ohio school districts, please note what those changes would be in the program design document.

Implementation Issues

The panels should recognize that the cost estimates derived from this analysis may inform target levels of future investment in public education. The program designs, resource specifications, and the cost estimates may be subject to extensive review and discussion.

Further, it is important to recognize that any recommendations for changes in the levels or distribution of school funding that may come out of this project generally cannot be implemented instantaneously. Significant amounts of planning on the part of the state and local educational decision makers may be necessary to efficiently and effectively manage any new resources that might be necessary to achieve the long-term goals. For this reason, it is not uncommon to phase in such changes over a three- to five-year time horizon to permit districts sufficient time to adjust patterns of decision making and resource allocation.

IMPORTANT: Note that the intention is **NOT** that the specific components of these program designs become mandates for local practice. However insightful the instructional designs created by the PJPs are, or persuasive the case for their effectiveness, the design and specification of adequate educational programs is not an exact science. Harnessing creativity and commitment, and taking advantage of the experience of local educators, necessitates providing them with discretion to determine exactly how funds should be used. Ultimately, each district will be able to make their own resource use decisions. However, we rely on your collective professional judgment to determine adequate resources needed to deliver the programs you have designed, which will be costed out and used to inform state funding policy.

Organization of Panel Activities

Each PJP will be asked to appoint a chair to take charge of the panel deliberations. In addition, we have assigned two AIR team members, a lead and assistant facilitator, to assist each PJP in completing its tasks. The lead facilitator will be available to answer any questions and to help structure the meeting. The assistant facilitator will be responsible for interfacing between the panel and the computer files described next.

Electronic Files Used by PJPs

Each panel will be working with two facilitators to complete the tasks. The facilitators will use the following two files to record the information provided by the panels:

- **PROGRAM DESIGN DOCUMENT.** The first file is a Microsoft Word document and will be used to enter the narrative description of your program design for the elementary, middle, and high school prototypes. This document is structured to record specific information surrounding the programs designed by your panel and has a flexible design to permit you to enter any information deemed appropriate in your deliberations. In addition to the narrative description of your program design, you may include any notes, reminders, concerns, and questions that arise during your deliberations.
- **COST MODEL.** This second file is a Microsoft Excel document containing structured worksheets that will be used to record the quantities of resources the panels believe are necessary to deliver the designed programs and provide corresponding real-time cost calculations for your panel to consider.

While one of the facilitators will be engaging the panel to guide their deliberations, the other will be responsible for recording the PROGRAM DESIGN narrative under the direction of the panel and entering the resource specifications into the COST MODEL based on decisions made by the panel.

Resources and Services

Exhibit E7 lists the school-level resources included in the COST MODEL worksheets. You will be asked to specify the quantities of these resources necessary to deliver the instructional programs you design. Please use the PROGRAM DESIGN document to describe how specific resources will be recorded within the elements listed in Exhibit 7.

Exhibit E7. School-Level Resources

Length of the School Day and Year

Proportions of Teachers by Experience Level

Core Instructional Program Personnel (teachers and educational assistants)

- Classroom teachers by grade level
- Middle and high school classroom teachers by subject area (core subjects, career education, and athletic program)
- Resource teachers and subject matter specialists (e.g., academic coaches, art, music, PE, English language arts, math, science, and gifted)

English Learner Specialists (professional staff and educational assistants)

- Bilingual resource teachers
- English language development resource teachers

Special Education Program Personnel (professional staff and assistants)

- Special education teachers
- Related services caseload teachers
- Speech/language pathologists

Instructional and Pupil Support Services (professional staff and assistants)

- Guidance counselors
- School psychologists
- Social workers
- School nurses
- Librarians/media specialists
- Technical consultants
- Academic coaches
- Other student support services

Non-Personnel Expenditures (includes supplies & materials, specialized equipment, contracted services)

Professional Development Expenditures

Student Athletics Programs

- Administrative personnel
- Coaches
- Transportation for athletics

Extended Time (day and year) Programs

- Administrative personnel
- Teachers

Administrative and Support Staff

- Principal and vice principals
- Other professional staff
- Clerical and office staff

Task Overview

With the outcomes described in the *Goals Statement* in mind, we ask that each panel undertake two specific activities: 1) develop a narrative description of the instructional programs (i.e., the program design) and 2) specify resources necessary to deliver that program. These activities will be completed for a series of hypothetical elementary, middle, and high schools that represent different tasks. Each task is presented below and organized around a specific set of student demographics used to detail the levels of student needs and enrollment characteristics that define the prototype schools for which the panels will be designing instructional programs and specifying resources. The student characteristics include the percent of students who are economically disadvantaged, the percent of English Learners, and the percent of students eligible for special education services.

Panelists will be asked to complete tasks for the following models at the elementary, middle, and high school levels:

1. Base Model (school with medium incidence of poverty)
2. High Poverty (school with high incidence of poverty)
3. Low Poverty (school with low incidence of poverty)

Task 1: The Base Model

Important note: The product of this task (the *Base Model*) provides a foundation for all remaining tasks to be completed over the course of the panel deliberations. We estimate that this task will require a significant amount of deliberation but will make the remaining tasks easier to accomplish.

The combination of **program design** and **resource specifications** you develop under this task will subsequently be referred to as the *Base Model*.

Task Overview – Typical Medium Poverty Ohio Schools

While we realize that all schools and students are unique, we are asking panelists to design instructional programs for schools attended by the typical medium poverty Ohio public school student. The table below (Exhibit E8) shows the enrollment and student characteristics of the typical medium poverty school across rural, small town, suburban, and urban district settings in Ohio at each schooling level.

Exhibit E8. Sample Characteristics for Task 1 (Medium Poverty) Elementary, Middle and High Schools (Counts and Percentages in Parentheses)

	School and student characteristics	Elementary school (grades K-5)	Middle school (Grades 6-8)	High school (Grades 9-12)
RURAL (Typology 1 & 2)	Enrollment	412	391	462
	Economically Disadvantaged	162 (39%)	149 (38%)	143 (31%)
	English Learners	0 (0%)	0 (0%)	0 (0%)
	Special Education	78 (19%)	66 (17%)	55 (12%)
SMALL TOWN (Typology 3 & 4)	Enrollment	397	370	457
	Economically Disadvantaged	199 (50%)	181 (49%)	187 (41%)
	English Learners	12 (3%)	7 (2%)	0 (0%)
	Special Education	72 (18%)	56 (15%)	64 (14%)
SUBURBAN (Typology 5 & 6)	Enrollment	474	583	1114
	Economically Disadvantaged	175 (37%)	210 (36%)	356 (32%)
	English Learners	28 (6%)	12 (2%)	22 (2%)
	Special Education	81 (17%)	87 (15%)	145 (13%)
URBAN (Typology 7 & 8)	Enrollment	414	712	917
	Economically Disadvantaged	335 (81%)	641 (90%)	844 (92%)
	English Learners	41 (10%)	21 (3%)	28 (3%)
	Special Education	70 (17%)	171 (24%)	202 (22%)

Activity 1: Instructional Program Design

Using the PROGRAM DESIGN document to report on your deliberations and decisions, please describe the instructional and support programs that you believe are necessary for ED students served in the typical Ohio schools to achieve the desired outcomes outlined in the *Goals Statement*. For guidance and instructional components to consider, use the guiding questions found in the PROGRAM DESIGN document. Please **be as specific as possible given the time available**. From your description, other professional educators should be able to understand the nature of the programs and how they relate to the desired outcomes.

Base elementary, middle, and high school instructional programs. We have provided space in the PROGRAM DESIGN document for descriptions of elementary (grades K-5), middle (grades 6-8), and high (grades 9-12) school programs. Please describe all of the basic instructional services necessary to meet the needs of ED students served in the school, including students living in poverty, English learners, and special education. Please describe the allocation, organization, and utilization of personnel and non-personnel resources and services in the following programmatic areas:

- Core Instructional Program (e.g., regular classrooms, resource teachers, and subject matter specialists)
- English Learner Program
- Special Education Program
- Instructional and Pupil Support Services
- Professional Development Services
- Athletics/Enrichment Programs (for Middle and High Schools)
- Extended Time (After-School and/or Summer) Programs
- Materials, Supplies, and Technology (Non-Personnel)
- Other Strategies for Delivering Services

Please also consider any additional support personnel and services you might require ensuring the success of the instructional programs.

Activity 2: Resource Specification

For this activity, your panel should use the worksheets in the Excel COST MODEL file to enter the quantities of resources necessary to deliver the instructional program described in your PROGRAM DESIGN document. The COST MODEL includes information on typical compensation

rates (inclusive of salaries and benefits) for full-time school personnel staff so that once you have entered the appropriate full-time equivalent (FTE) quantities, you will be able to see the cost implications of your decisions. The combination of program design and resource specifications you develop under this task will subsequently be referred to as the *Base Model*.

Navigating the COST MODEL

A lead facilitator and facilitator assistant will be available to navigate and input resources into the COST MODEL worksheets.

Schooling Level Specific Worksheets. In addition, there are separate input worksheets for the three schooling levels: one each for elementary (ELEM), middle (MIDDLE), and high (HIGH) schools. Each of these worksheets contains the basic set of resources used to support school operations at each grade level. The top section of each worksheet reproduces the enrollment and student demographic characteristics for typical Ohio schools pertinent for each task. The second section of the worksheet provides panels with a structure for translating the desired instructional program into specific resources. Specifically, it asks panels to specify the:

- Length of the school day and year
- Fulltime equivalent (FTE) quantities for various types of teaching and professional personnel
- FTE quantities of other non-teaching personnel and specialists
- Allocations of non-personnel resources
- Amounts of time and other resources that should be devoted to professional development
- Percentages of students served, and hours of educator time required for delivering extended day or extended year programs
- Percentages of students who will be taking career and technical education/vocational education courses (for high school only)

Data may only be entered in the white cells within each worksheet. Colored cells provide relevant information, calculations of relevant statistics, and cost estimates for your program. If the panel decides not to allocate funds or assign certain personnel, this choice should be indicated with a '0'.

In instances where an employee works in a school less than full time, please allocate only the fraction of full time (FTE) necessary to deliver the educational program. For example, a teacher who teaches half-time would count as 0.5 FTE.

Default values. You will also notice that we have provided default values for Task 1 for many of the resource quantities, class sizes, and per pupil expenditures. These default values represent estimated class size and resource data for schools with the corresponding demographics.

Task 2: Programs for High Poverty Schools

Task Overview – Typical High Poverty Ohio Schools

In Task 1, we asked your panel to develop the *Base Model*. In Task 2, we are asking you to describe how you would change your *Base Model* (i.e., your program design and resource specifications in Task 1) in response to an increase in the percentage of economically disadvantaged students, holding all other student characteristics constant. The table below (Exhibit E9) expresses these increases by showing the enrollment and student characteristics of the typical school across rural, small town, suburban, and urban district settings in Ohio at each schooling level, but with substantially higher poverty.

Exhibit E9. Sample Characteristics for Task 2 (High Poverty) Elementary, Middle and High Schools (Counts and Percentages in Parentheses)

	School and student characteristics	Elementary school (Grades k-5)	Middle school (Grades 6-8)	High school (Grades 9-12)
RURAL (Typology 1 & 2)	Enrollment	412	391	462
	Economically Disadvantaged	375 (91%)	301(77%)	370 (80%)
	English Learners	0 (0%)	0 (0%)	0 (0%)
	Special Education	78 (19%)	66 (17%)	55 (12%)
SMALL TOWN (Typology 3 & 4)	Enrollment	397	370	457
	Economically Disadvantaged	393 (99%)	366 (99%)	452 (99%)
	English Learners	12 (3%)	7 (2%)	0 (0%)
	Special Education	71 (18%)	56 (15%)	64 (14%)
SUBURBAN (Typology 5 & 6)	Enrollment	474	583	1,114
	Economically Disadvantaged	465 (98%)	571 (98%)	1,058 (95%)
	English Learners	28 (6%)	12 (2%)	22 (2%)
	Special Education	81 (17%)	87 (15%)	145 (13%)
URBAN (Typology 7 & 8)	Enrollment	414	712	917
	Economically Disadvantaged	414 (100%)	712 (100%)	917 (100%)
	English Learners	41 (10%)	21 (3%)	28 (3%)
	Special Education	70 (17%)	121 (17%)	165 (18%)

Program Modifications

The next step for your panel is to consider whether the increase in the student poverty levels in Task 2 would require you to make modifications in your program design and the corresponding the resource specifications developed for the *Base Model* in Task 1.

- **A change from medium to high levels of poverty**

How would an increase in student poverty from the level in the *Base Model* (Task 1) to the **high poverty** level (in Task 2) affect the base instructional program designed to achieve the outcome goals?

Please proceed to complete *Activities 1* and *2* below using the guidelines and instructions in the appropriate PROGRAM DESIGN document and COST MODEL file for these tasks.

Activity 1: Instructional Program Design

Using the PROGRAM DESIGN document, please follow the guiding questions provided when considering modifications in the *Base Model* resulting from the specified change in student characteristics. It is not necessary for the panels to update the entire series of programmatic components that they originally did for the *Base Model*. Instead, panels should focus **ONLY** on identifying those changes that must be made to the *Base Model* design in response to the increase in student need presented in this task (*High Poverty Schools*).

Activity 2: Resource Specification

Once you complete Activity 1 for all of the tasks, you will move on to specifying the staff and non-personnel resources necessary to support the program designs developed. At this point, the PJP facilitators will open the portions of the elementary, middle, and high school worksheets in the COST MODEL file corresponding to Task 2 and specify any changes in the resource specifications necessary to deliver this modified instructional program. The values previously determined for the *Base Model* will be the default starting values automatically entered for this task into each of these three schooling-level specific worksheets.

Task 3: Programs for Low Poverty Schools

Task Overview

In Task 1, we asked your panel to develop the *Base Model*. In Task 3, we are asking you to describe how you would change your *Base Model* (i.e., your program design and resource specifications in Task 1) in response to a decrease in the percentage of economically disadvantaged students, holding all other student characteristics constant. The table below (Exhibit E10) expresses these decreases by showing the enrollment and student characteristics of the typical school across rural, small town, suburban, and urban district settings in Ohio at each schooling level, but with substantially lower poverty.

Exhibit E10. Sample Characteristics for Task 1 (Low Poverty) Elementary, Middle and High Schools (Counts and Percentages in Parentheses)

	School and student characteristics	Elementary school (Grades k-5)	Middle school (Grades 6-8)	High school (Grades 9-12)
RURAL (Typology 1 & 2)	Enrollment	412	391	462
	Economically Disadvantaged	54 (13%)	59 (15%)	65 (14%)
	English Learners	0 (0%)	0 (0%)	0 (0%)
	Special Education	78 (19%)	66 (17%)	55 (12%)
SMALL TOWN (Typology 3 & 4)	Enrollment	397	370	457
	Economically Disadvantaged	107 (27%)	115 (31%)	91 (20%)
	English Learners	12 (3%)	7 (2%)	0 (0%)
	Special Education	71 (18%)	56 (15%)	64 (14%)
SUBURBAN (Typology 5 & 6)	Enrollment	474	583	1,114
	Economically Disadvantaged	43 (9%)	58 (10%)	100 (9%)
	English Learners	28 (6%)	12 (2%)	22 (2%)
	Special Education	81(17%)	87 (15%)	144 (13%)
URBAN (Typology 7 & 8)	Enrollment	414	712	917
	Economically Disadvantaged	128 (31%)	285 (40%)	504 (55%)
	English Learners	41 (10%)	21 (3%)	28 (3%)
	Special Education	70 (17%)	121 (17%)	165 (18%)

Program Modifications

The next step for your panel is to consider whether the decrease in the student poverty levels in Task 3 would require you to make modifications in your program design and the corresponding resource specifications developed for the *Base Model* in Task 1.

- **A change from medium to low levels of poverty**

How would an increase in student poverty from the level in the *Base Model* (Task 1) to the **low poverty** level (in Task 3) affect the base instructional program designed to achieve the outcome goals?

Please proceed to complete *Activities 1* and *2* below using the guidelines and instructions in the appropriate PROGRAM DESIGN document and COST MODEL file for these tasks.

Activity 1: Instructional Program Design

Using the PROGRAM DESIGN document, please follow the guiding questions provided when considering modifications in the *Base Model* resulting from the specified change in student characteristics. It is not necessary for the panels to update the entire series of programmatic components that they originally did for the *Base Model*. Instead, panels should focus **ONLY** on identifying those changes that must be made to the *Base Model* design in response to the increase in student need presented in this task (*Low Poverty Schools*).

Activity 2: Resource Specification

Once you complete Activity 1 for all of the tasks, you will move on to specifying the staff and non-personnel resources necessary to support the program designs developed. At this point, the PJP facilitators will open the portions of the elementary, middle, and high school worksheets corresponding to Task 3 and specify any changes in the resource specifications necessary to deliver this modified instructional program. The values previously determined for the *Low Poverty Model* will be the default starting values automatically entered for this task into each of the three schooling-level specific worksheets.

Program Design Document

As mentioned in the general instructions, *“the purpose of these tasks is for your team to describe educational programs that, in the judgment of its members, will provide an adequate opportunity for students to meet the Desired Education Goals.”* While the ultimate goal of these deliberations is to arrive at a cost corresponding to an amount necessary for an ‘adequate’ education for students in Ohio, we feel it is equally important to understand the design elements from which the numbers are generated.

This PROGRAM DESIGN document is intended for recording panel deliberations on instructional programs designed for schools with varying demographic compositions. This document has three main purposes:

1. To serve as a guide to help panels think about the different resources necessary for delivery of these programs. These resources will be further specified in the COST MODEL.
2. To provide policymakers insight into what resources are considered most effective and necessary to meet the desired educational goals.
3. To build as much transparency as possible in this process. This is particularly important when thinking about how these results will be presented and used by various stakeholders.

Please note that all boxes provided in this document are designed to expand as you enter information, and there are projection screens so that all panel members can view the information as it is being entered into the document. AIR has assigned a data entry specialist to assist the panels in entering the narrative developed by the panel into the PROGRAM DESIGN document.

There are no specific restrictions on what information should be included in this document. Please enter as much information as necessary to capture the essential elements and issues that arise during your panel deliberations. If you have any questions or concerns at any point during these exercises, please consult the facilitators assigned to your panel.

We recognize that this is a daunting task and one that could conceivably require substantially more time than we have provided for this work. However, it is important to keep in mind that the purpose of this exercise is not to prescribe how all Ohio schools should necessarily implement their instructional programs nor exactly how they should allocate their budgets among various resources and services. We are **NOT** asking you to create a “one size fits all” model. Instead, we are asking for what you consider to be a reasonable model of services and programs that might legitimately achieve the desired results at the lowest possible cost. This

model will be used to help guide the modification of the existing school funding formula to be used to provide access to resources in schools and districts across the entire state.

Task 1: The Base Model Instructional Program Design

Task 1 has three separate activities and is the most extensive of all the tasks. As mentioned, this task will likely require a substantial portion of your overall time, and the work you do for this task should help to make the remaining tasks easier to accomplish.

Using the guiding questions below, each panel should develop elementary, middle, and high school instructional programs aimed at achieving the desired educational goals. These questions are subsumed into six different themes. However, we recognize that these themes are not necessarily distinct and may overlap with one another. Panels should address these questions and themes in any order that they see fit. **We do not expect that panels will necessarily address each and every question listed below, but rather will use these as a guide to think about instructional programs.**

Below is a table with the themes and questions that you might consider during this phase of your deliberations. These are not necessarily exhaustive but are rather suggestive of some of the kinds of things you should consider prior to working with the COST MODEL Excel worksheets. We strongly encourage the panels to provide information on the **rationale** behind their decisions and program designs.

General Instructions

Imagine you are no longer at your current school and district but are charged with creating an instructional design for a new school along with the colleagues joining you in this exercise. This program should be designed to meet the expectations of the Goals Statement.

General Program Characteristics

- What is the overarching instructional design for this school?
 - What will the instructional day and week look like for the typical student and teacher?
 - Given the structure of the instructional day, what personnel will be necessary?
 - What is the desired distribution of experienced versus early career staff? Will their roles differ?
 - What types of instructional and other specialists will be required to meet outcome goals?
 - What are the target class sizes and teacher caseloads?
 - What percentage of high school students will be taking career and technical/vocational education courses? In which areas are they taking most of those courses?
 - What are the rationales and expectations behind each of these general program characteristics?
-

<p>Special Populations</p> <ul style="list-style-type: none"> • What types of support are required for students living in poverty? • How will the special education (SE) program be structured? • To what extent will SE students be included in regular schools and classrooms? • What types of support are required by SE students? • How will the English learner (EL) program be structured? • What types of support are required by EL students? • What are the rationales and expectations behind each of these decisions surrounding special populations? <p>Important Note: Please remember that special education services available at the school level include special day class teachers, resource specialists, itinerant consulting teachers and related service providers assigned to designated instructional services (speech, physical occupational therapy, etc.)</p>	<p>Extended School Day/Year Programs</p> <ul style="list-style-type: none"> • What students will be targeted in the extended day program? What will be the focus and structure of this program? • <i>Several things to consider include class or program size, the duration of the program, supplemental materials, and the number of required teachers and aides.</i> • What students will be targeted in the extended year program? What will be the focus and structure of this program? <p><i>Several things to consider include class or program size, the duration of the program, supplemental materials, and the number of required teachers and aides.</i></p>
<p>Professional Development (PD)</p> <ul style="list-style-type: none"> • What types of PD will teachers receive? Please describe what professional development opportunities will be available (in-services, release days, time for collaboration) to teachers and support staff and the content or focus of these activities. What will be the focus, frequency, structure, and duration? • Who will attend and deliver these opportunities? • What are the rationales and expectations behind each of these decisions surrounding PD? • How much of the PD will be led internally by schools/district and how much will be contracted out to consultants or other external experts? 	<p>Non-personnel Expenditures</p> <ul style="list-style-type: none"> • What types of instructional materials and supplies will be used for classroom instruction? • What types of instructional materials and supplies will be available for special needs populations? • What technology will be available to students and teachers? • What are the rationales and expectations behind each of these decisions surrounding non-personnel expenditures?
<p>Support Personnel</p> <ul style="list-style-type: none"> • In terms of additional personnel, what instructional support and pupil services will students receive? • What roles will these additional personnel hold? • What are the rationale and expectations behind each of these decisions surrounding support personnel? <p>Administrative Services</p> <ul style="list-style-type: none"> • What administrative services will be available? Please describe the number and roles of administrators, clerical staff, security and other professional staff. 	

Please use the boxes below to enter your deliberations and decisions surrounding the base model (typical Ohio school) instructional program. This handout contains information on this typical school’s demographics and resource use (in the “Resource Profile for Base Models” worksheet). Remember to include your rationale behind your instructional program decisions. If desired, the data entry assistant will identify and group the instructional design inputs into the themes listed above.

General Programmatic Issues that Cut across Grade Levels (e.g., Degree of Inclusion, etc.)

Please enter description and rationale below (the box will automatically expand to fit your narrative).

Elementary School Program

Please enter description and rationale below (the box will automatically expand to fit your narrative).

Middle School Program

Please enter description and rationale below (the box will automatically expand to fit your narrative).

High School Program

Please enter description and rationale below (the box will automatically expand to fit your narrative).

General Questions and Concerns

Resource Specification

Once the program design exercise is completed, you will work within the COST MODEL worksheets and begin to specify the resources necessary to deliver the instructional programs. Your facilitators will coordinate data entry into the worksheets and be available throughout the deliberations for questions. The following are some reminders and tips for entering information into the worksheets:

- Please enter data only in the white (open) cells in the worksheet.
- You will be provided with default values reflecting expected resource allocations in Ohio schools with the demographics corresponding with each task.
- The values entered into the Base Model of the COST MODEL will automatically propagate to the cells in the remaining tasks.

Tasks 2 and 3: Modifications to Program Designs

Tasks 2 and 3 focus on changes in instructional program design with respect to varying economically disadvantaged students and must be performed for each schooling level (elementary, middle and high). For these tasks, panels should not work to recreate the entire instructional program. Instead, they should focus primarily on any changes in the program design resulting from the changes in student demographics or enrollment presented in the task.

Task 2: Change from Medium Poverty to High Poverty Model

Activity 1: Program Design Modification

Use the questions below to guide your deliberations for this task. Please refer to your **TASK DEMOGRAPHICS WORKSHEET** to see the change in student poverty we are asking you to consider relative to the **BASE MODEL**.

Elementary School Program

Change from Medium Poverty to High Poverty model

Please describe how a change in the percentage of students in poverty from the level in the **Base** model (Task 1) to the **High Poverty** model (in Task 2) would affect the base program designed to achieve the outcome goals.

Please enter modifications and rationale below (the box will automatically expand to fit your narrative).

Middle School Program

Change from Medium Poverty to High Poverty Model

Please describe how a change in the percentage of students in poverty from the level in the **Base** model (Task 1) to the **High Poverty** model (in Task 2) would affect the base program designed to achieve the outcome goals.

Please enter modifications and rationale below (the box will automatically expand to fit your narrative).

High School Program

Change from Medium Poverty to High Poverty Model

Please describe how a change in the percentage of students in poverty from the level in the **Base** model (Task 1) to the **High Poverty** model (in Task 2) would affect the base program designed to achieve the outcome goals.

Please enter modifications and rationale below (the box will automatically expand to fit your narrative).

Activity 2: Resource Specification

When you have completed modifications to the instructional program designs for all tasks, the PJP facilitators will open the COST MODEL worksheets and begin to specify the resources necessary to deliver the instructional programs. Your facilitators will provide assistance with using the worksheets and be available throughout the deliberations for questions. When specifying resources, you should feel free to make further modifications in your program designs as necessary. The following are some general guidelines and tips for entering information into the worksheets:

- Please enter data only in the white (open) cells in the worksheet.
- The white cells in Task 2 are pre-populated with the numbers based on those you entered for the Base Model. You need only enter new values in the Task 2 cells for those numbers that should be changed relative to the Base Model.

Task 3: Change from Medium Poverty to Low Poverty School

Activity 1: Program Design Modification

Use the questions below to guide your deliberations for this task. Please refer to your **TASK DEMOGRAPHICS WORKSHEET** to see the change in student poverty we are asking you to consider relative to the **BASE MODEL**.

Elementary School Program

Change from Medium Poverty to Low Poverty Model

Please describe how a change in the percentage of students in poverty from the level in the **Base** model (Task 1) to the **Low Poverty** model (in Task 3) would affect the base program designed to achieve the outcome goals.

Please enter modifications and rationale below (the box will automatically expand to fit your narrative).

Middle School Program

Change from Medium Poverty to Low Poverty Model

Please describe how a change in the percentage of students in poverty from the level in the **Base** model (Task 1) to the **Low Poverty** model (in Task 3) would affect the base program designed to achieve the outcome goals.

Please enter modifications and rationale below (the box will automatically expand to fit your narrative).

High School Program

Change from Medium Poverty to a Low Poverty Model

Please describe how a change in the percentage of students in poverty from the level in the **Base** model (Task 1) to the **Low Poverty** model (in Task 3) would affect the base program designed to achieve the outcome goals.

Please enter modifications and rationale below (the box will automatically expand to fit your narrative).

Activity 2: Resource Specification

When you have completed modifications to the instructional program designs for all tasks, the PJP facilitators will open the COST MODEL worksheets and begin to specify the resources necessary to deliver the instructional programs. Your facilitators will provide assistance with using the worksheets and be available throughout the deliberations for questions. When specifying resources, you should feel free to make further modifications in your program designs as necessary. The following are some general guidelines and tips for entering information into the worksheets:

- Please enter data only in the white (open) cells in the worksheet.
- The white cells in Task 3 are pre-populated with the numbers based on those you entered for the Base Model. You need only enter new values in the Task 3 cells for those numbers that should be changed relative to the Base Model.

Exhibit E11. School Resource Profile by Typology Major Grouping, 2022-2023

Position	Typology major grouping											
	Rural			Small towns			Suburban			Urban		
	Elementary	Middle	High	Elementary	Middle	High	Elementary	Middle	High	Elementary	Middle	High
Administrative Assistant FTE	0.86	0.96	1.34	0.81	0.95	1.18	1.34	1.37	2.08	1.04	1.33	2.47
Assistant Principal FTE	0.85	0.92	1.12	0.84	0.89	1.13	0.89	1.20	2.32	1.11	1.89	2.57
Coordinator FTE	1.11	1.09	1.46	0.91	0.89	1.08	0.99	1.02	1.35	1.32	1.54	1.90
Counseling FTE	0.95	1.19	1.74	0.99	1.21	1.90	1.12	1.78	3.91	1.04	2.17	3.57
Curriculum Specialist FTE	1.20	1.11	1.12	1.10	0.92	1.21	1.68	1.89	2.24	1.66	2.36	2.28
Instructional Para. FTE	6.01	3.59	3.24	5.09	2.93	3.01	8.21	5.92	8.19	7.10	8.88	8.71
Principal FTE	1.05	1.05	1.12	1.06	1.07	1.12	1.05	1.09	1.18	1.06	1.14	1.16
Psychologist FTE	1.02	0.86	1.00	1.04	0.88	1.06	0.93	0.87	1.22	0.81	1.12	1.36
Registered Nurse FTE	0.91	0.87	0.96	0.94	0.91	0.99	0.84	0.87	1.06	1.01	1.04	1.08
Remedial Specialist FTE	2.42	1.48	1.56	2.35	1.43	1.54	2.22	1.38	1.33	2.97	1.87	1.56
Resource Officer FTE	1.02	1.74	1.29	0.60	1.03	0.48	1.21	1.78	0.75	1.13	1.56	0.73
Social Work FTE	0.95	1.17	0.90	0.93	1.21	0.86	0.77	0.99	1.27	1.05	1.57	1.57
Speech and Lang. Therapist FTE	1.14	0.74	0.51	1.12	0.72	0.55	1.26	0.81	0.82	1.05	1.07	0.94
Teacher FTE	22.75	24.39	28.95	21.70	22.96	28.25	25.83	35.10	61.14	24.25	46.50	57.70
Teaching Aide FTE	5.76	3.29	3.15	5.00	2.80	3.15	7.44	5.67	8.16	3.91	5.54	5.82

Exhibit E12. Compensation Rates by Position Type

Type	Position description	Annual salary	Benefit rate	Compensation rate
Instructional	Teacher (All-Regular-Elementary)	\$58,695.50	39%	\$81,586.75
Instructional	Teacher, Regular Elementary	\$44,760.00	39%	\$62,216.40
Instructional	Teacher, Regular Elementary	\$72,631.00	39%	\$100,957.09
Instructional	Teacher (All-Regular-Middle)	\$56,149.50	39%	\$78,047.81
Instructional	Teacher, Regular Middle	\$41,884.00	39%	\$58,218.76
Instructional	Teacher, Regular Middle	\$70,415.00	39%	\$97,876.85
Instructional	Teacher (All-Regular-High)	\$54,555.00	39%	\$75,831.45
Instructional	Teacher, Regular High	\$41,060.00	39%	\$57,073.40
Instructional	Teacher, Regular High	\$68,050.00	39%	\$94,589.50
Pupil Support	Adapted Physical Education Therapist	\$73,993	39%	\$102,850.27
Administrative	Administrative Assistant	\$47,221	39%	\$65,637.19
Administrative	Assistant Principal	\$91,052	39%	\$126,562.28
Administrative	Assistant, Deputy/Associate Superintendent	\$126,350	39%	\$175,626.50
Pupil Support	Athletic Trainer	\$14,442	39%	\$20,074.38
Pupil Support	Attendance Officer	\$39,861	39%	\$55,406.79
Pupil Support	Attendant	\$20,968	39%	\$29,145.52
Pupil Support	Audio-Visual Staff	\$34,697	39%	\$48,228.83
Pupil Support	Audiologist	\$70,985	39%	\$98,669.15
Administrative	Clerical	\$39,034	39%	\$54,257.26

Type	Position description	Annual salary	Benefit rate	Compensation rate
Administrative	Community School Administrator	\$74,859	39%	\$104,054.01
Administrative	Coordinator	\$67,423	39%	\$93,717.97
Pupil Support	Counseling	\$72,413	39%	\$100,654.07
Instructional	Curriculum Specialist	\$68,200	39%	\$94,798.00
Administrative	Custodian	\$38,815	39%	\$53,952.85
Administrative	Dean of Students	\$69,523	39%	\$96,636.97
Pupil Support	Dietitian/Nutritionist	\$58,165	39%	\$80,849.35
Administrative	Education Administrative Specialist	\$90,959	39%	\$126,433.01
Pupil Support	Educational Interpreter	\$36,626	39%	\$50,910.14
Pupil Support	ESC Supervisor	\$88,167	39%	\$122,552.13
Pupil Support	Family and Community Liaison	\$47,635	39%	\$66,212.65
Pupil Support	Full-time Permanent) Substitute Teacher	\$31,361	39%	\$43,591.79
Instructional	Instructional Paraprofessional	\$25,023	39%	\$34,781.97
Pupil Support	Librarian/Media	\$80,838	39%	\$112,364.82
Pupil Support	Library Aide	\$25,785	39%	\$35,841.15
Pupil Support	Mobility Therapist	\$71,121	39%	\$98,858.19
Pupil Support	Monitoring	\$14,891	39%	\$20,698.49
Pupil Support	Occupational Therapist	\$68,367	39%	\$95,030.13
Pupil Support	Occupational Therapy Assistant (OTA)	\$38,559	39%	\$53,597.01
Pupil Support	Extra/Intra - Curricular Activities Assistant	\$2,381	39%	\$3,309.59

Type	Position description	Annual salary	Benefit rate	Compensation rate
Pupil Support	Parent Coordinator	\$35,661	39%	\$49,568.79
Pupil Support	Parent Mentor	\$27,484	39%	\$38,202.76
Pupil Support	Physical Therapist	\$71,557	39%	\$99,464.23
Pupil Support	Physical Therapy Assistant (PTA)	\$38,857	39%	\$54,011.23
Pupil Support	Planning/Research/Development/Evaluation/Analysis	\$55,558	39%	\$77,225.62
Administrative	Principal	\$101,767	39%	\$141,456.13
Pupil Support	Psychologist	\$78,302	39%	\$108,839.78
Administrative	Records Managing	\$45,403	39%	\$63,110.17
Pupil Support	Registered Nursing	\$58,433	39%	\$81,221.87
Pupil Support	Remedial Specialist	\$67,930	39%	\$94,422.70
Pupil Support	Resource Officer	\$40,461	39%	\$56,240.79
Pupil Support	Social Work	\$58,800	39%	\$81,732.00
Pupil Support	Speech and Language Therapist	\$67,218	39%	\$93,433.02
Administrative	Superintendent	\$127,505	39%	\$177,231.95
Pupil Support	Supplemental Service Teaching (Serves Students with Disability Conditions Only)	\$65,442	39%	\$90,964.38
Instructional	Teacher Mentor/Evaluator	\$17,278	39%	\$24,016.42
Instructional	Teaching Aide	\$22,447	39%	\$31,201.33
Instructional	Tutor/Small Group Instructor (Serves Students with Disability Conditions Only)	\$46,812	39%	\$65,068.68

Appendix F. Panelist Recruitment Process and Panelist Biographies

Recruitment Process for the Professional Judgment Panels

The objective of the recruitment process was to identify and obtain participation of expert educators from across the state to serve on one of the professional judgement panels (PJPs). To this end, the study team requested nominations for outstanding educators from organizations across the state. Emails were sent to all public school district superintendents and charter school leaders in Ohio to solicit nominations. The solicitation materials included a link to an online nomination form that allowed educators to nominate others and/or themselves. The form asked candidates and nominators to provide contact details, employment history, relevant education and experience, and demographic information. Additionally, the form requested a record of service to students from traditionally underserved backgrounds and any awards or recognitions the nominee had received related to their duty as an educator. This information was used to select candidates for the panels.

For each panel, the study team sought nominations for 9 positions, aiming to ensure that each of the following roles was represented: a superintendent, principals and teachers at the elementary, middle, and high school levels, a school business official (e.g., chief financial officer, district treasurer, etc.), and a specialist who serves ED students (e.g., social worker).

Selection Process

As a key part of the selection process, the study team defined the desired criteria for panelists and created a scoring rubric to evaluate candidates. The rubric, totaling 100 points, awarded points based on: candidate education/experience, service to traditionally underserved students, and any honors, awards, or recognitions received.

Panelists could earn up to 40 points for their cumulative education and experience. The point scale, adapted from the Ohio Education Association (OEA) Teacher Pay Range Schedule, was based on the candidate’s highest education level (e.g., Bachelor’s, Master’s, Doctorate) and years of experience (e.g., 0-2 to 25+ years). For example, a teacher with a master’s degree and 20 years of experience received a score of 26.

Exhibit F1. Experience and Education Scoring Matrix

Degree	Years of experience													
	0-2	3	4	5	6	7	8	9	10	11	12	13-19	20-24	25+
BA	1	2	3	4	5	6	7	8	9	10	11	12	13	14
MA	2	4	6	8	10	12	14	16	18	20	22	24	26	28
PhD	3	6	9	12	15	18	21	24	27	30	33	36	39	40

In addition to their education and experience, candidates were asked to describe how they contributed to achieving the following outcomes:

- A. Improved outcomes for students, particularly those from traditionally underserved backgrounds;
- B. Proof of successfully implementing specialized programs (e.g., after-school or extended-year programs);
- C. Leadership accomplishments at their school or district (e.g., improving attendance, academic achievement, behavior, discipline, and/or student wellness).
- D. Receipt of any awards, honors, or recognitions in their current educational role.

As these four criteria carried the most weight in the panelist selection process, candidates were instructed to be as descriptive as possible to ensure their nominations were evaluated appropriately. Candidates could earn 20 points for addressing outcome A, 10 points for outcomes B and C, and 20 points for outcome D, for a total of 60 points.

Each candidate was scored across all three rubric components, and their cumulative score determined their eligibility for panel participation. Once all candidates were scored, they were sorted by typology major grouping (i.e., Rural, Small Town, Suburban, and Urban), as the intention was to assemble two panels from each group. To ensure a wide range of perspectives, the study team also aimed for diversity on the panels in terms of race/ethnicity, gender, and district/school type (e.g., traditional public versus community schools). For the Rural, Small Town, Suburban, and Urban typology major groupings, two panels were created for each, so the top two scorers for each position were selected for participation in the respective groups. However, due to lack of attendance, the two Suburban panels collapsed to one panel. If a top scorer was unavailable, the study team invited the next highest-scoring candidate.

In cases where there were not enough candidates for a specific role, a candidate from another role, who had not been selected for that role but had relevant experience, was invited to fill the unfilled role. For example, if there were insufficient elementary school teacher applicants, a principal who had not been selected for the principal role but had experience as an elementary school teacher was invited to participate in that role. Through this process, all panel positions were filled with qualified and experienced education professionals, ensuring a diverse set of perspectives.

Panelist Bios

Rural Typology Panel 1 Biographies

Greg Nickoli

Greg Nickoli is the Superintendent of Pioneer Career & Technology Center. He has his M.A. and has held several positions in education, namely an Intervention Specialist, Assistant Principal, Principal and Assistant Director. He has served on numerous local Leadership Boards and is a member of the Buckeye Association of School Administrators (BASA) Career-Technical Committee and Fair School Funding Plan Work Group. Greg has also been named a BASA Exemplary Educational Leader and is the

President of the Ohio Association of Career-Technical Superintendents. Under his leadership, Pioneer Career & Technology Center has increased its on-site enrollment from 850 to over 1,250 students. Additionally, Greg has helped oversee the implementation of several programs designed to support economically disadvantaged students, including scholarship opportunities and opening a “sharing room” that provides personal and education resources for students that need it.

Staci Peters

Dr. Staci Peters is the Coordinator of Professional Learning and Leadership for the Fairfield County Education Service Center (ESC). With over a decade of experience in education as a teacher, principal, and district level administrator, Dr. Peters is dedicated to school improvement and providing quality educational opportunities to all students, especially being a champion for marginalized populations. She has served as a member and facilitator for multiple teacher-, building-, and district-level leadership teams and has held several district-wide committee seats. Additionally, during her tenure as principal, she oversaw a significant increase in academic achievement and decrease in disciplinary referrals in her school. Now in an ESC role, Dr. Peters helps 8 school districts analyze their data and provides professional learning to teachers and administrators.

Melcie Wells

Melcie Wells is the Treasurer and CFO for Warren Local Schools. She holds bachelor’s and master’s degrees in accounting and was formerly an Auditor of State for the Local Government Services Division, where she worked with districts in fiscal emergency planning and worked with state commissions. Throughout her career, Melcie has received numerous prestigious committee and leadership appointments, recognitions, and awards. She has served on the Education Finance/ODEW Advisory Committee, Audit Committee, and Legislative Committee for the Ohio Association of School Business Officials (OASBO). Additionally, she served as the president of OASBO from 2020-21 and the Southeast Regional Director from 2013-19. She was also recognized as the OASBO Outstanding Treasurer of the Year in 2023 and awarded the OASBO Regional Distinguished Honor Award for the Southeast region in 2024. Melcie is driven by a passion for determining costs to implement programming to better serve students district-, county- and state-wide.

Tracey Spires

Tracey Spires is the Title I Director/Coordinator for the Adams County-Ohio Valley School District. She has held several leadership positions throughout her career in education, including School Psychologist, School Improvement Supervisor, Director of Special Education, Director of Exceptional Education, and Director of State and Federal Programs/Attendance (Truancy) Officer. She holds an M.A. in Clinical Psychology, M.S. in School Psychology, Ed.S. in School Psychology, and has Principal Licensure.

Tracey has been instrumental in spearheading initiatives aimed at enhancing student well-being and academic success in Adams County-Ohio Valley School District. She played a pivotal role in developing a school-based multi-tiered infrastructure for mental health services and providing in-person and telehealth mental health services for students. Tracey also developed a partnership with the Adams County Juvenile Probation and Diversion Departments to streamline the process for obtaining essential student information, including attendance records, schedules, grades, and special education services,

ensuring that students receive the support and interventions they need. Tracey has also organized attendance intervention mediation meetings, established an alternative school setting for students with chronic absenteeism, and expedited credit recovery for vulnerable student populations. In 2022, Tracey was recognized for her numerous contributions to addressing systemic challenges that impact economically disadvantaged students by receiving the Adams County Exceptional Achievement Award. Tracey has a deep understanding of the unique challenges faced by economically disadvantaged students and is committed to advocating for their needs and fostering their success.

Sara Core

Sara Core is the Principal of Upper Scioto Valley Elementary School. Prior to becoming a principal, Sara served as a teacher and literacy instructional coach. She has her M.A., is credentialed in grades 4-9 language arts, reading, and social studies instruction, and holds K-12 principal licensure.

During her tenure as principal, Sara has worked with building and district leadership teams to improve literacy and implement Multi-Tiered System of Support (MTSS) interventions at the school and district level. She has helped align her district's literacy practices to the science of reading and implemented a dyslexia screener for all K-6 students. Additionally, Sara has consulted with the district to audit current instructional practices and assessment through the creation of a district-wide literacy plan, and trained a staff member on structured literacy to become a district-wide specialist. As a result of her efforts, her district's Third Grade Ohio State Test (OST) scores in English Language Arts increased from 52% proficient or higher in 2021 to 70% proficient or higher in 2023. Additionally, as the leader of MTSS implementation in her school building, she has overseen a reduction in office referrals and increase in student attendance. She continues to work tirelessly to improve literacy and behavioral outcomes for students in her school and district.

Pamela Kennedy

Pamela Kennedy is a Regional Early Literacy Specialist for Ohio's State Support Team. She has her M.A., and currently works directly with local education agencies in Ohio to instruct educators on the science of reading so that they can apply this information into their teaching, ensuring every student is provided with instruction proven to support language and literacy development for all learners. In her career as an educator, Pamela has taught at the elementary school level and has worked as a Teaching English to Speakers of Other Languages (TESOL) teacher.

Throughout her career, Pamela has received several important committee appointments and certifications. She was a member of both the Hiram and Ursuline Education Advisory Boards and is currently part of the Ohio Department of Education and Workforce (DEW) State Literacy Network, the Twinsburg School Foundation, and the Northern Ohio Board of International Dyslexia Association (NOBIDA). She is also credentialed as a DEW Dyslexia and Science of Reading Facilitator and is a Language Essentials for Teachers of Reading and Spelling (LETRS) facilitator, providing professional development for Ohio teachers.

Lindsey Clawson

Lindsey Clawson is a Foreign Language Teacher at Miller High School in the Southern Local School District – Perry County. She has her B.A. with a specialization in K-12 French. Throughout her

teaching career, Lindsey's impact has been felt far beyond the classroom. She has been involved in initiatives aimed at boosting student wellness, including being a member of building and district leadership teams, junior class advisor, and Positive Behavior Interventions and Supports (PBIS) team leader in her previous district. In recognition for these efforts, Lindsey won the Licking County You Made a Difference Award.

Lindsey's dedication to service has continued into her new district. Lindsey is dedicated to student's well-being and development and teaches Leadership Skills classes based on the "7 Habits of Highly Effective Teens." Lindsey is also a member of her school's MTSS team, where she is working to improve student behavior and reduce student discipline. Moreover, she is researching suitable social-emotional learning content to be taught to 7-12th graders for use in her school. This year, Lindsey's district has updated their districtwide goals, and she is excited to begin collaborating with district leadership to improve student attendance, among other new initiatives.

Missy Jones

Missy Jones is the College Coordinator for the Southern Local School District. She has her B.A. and takes a leadership role in working to increase graduation rates and develop post-graduation plans with all upcoming graduates. She is dedicated to working independently with students to explore their strengths and develop an open dialogue to help them understand the importance of education from both an academic and social perspective. Through her effort, Missy has been able to break down barriers and help students come to school physically and mentally engaged to learn, explore, and understand and has seen an increase in attendance and student success.

Rural Typology Panel 2 Biographies

Craig Hurley

Craig Hurley is currently the Superintendent of Upper Scioto Valley Schools. He has his M.A. and has been the Superintendent for the past five years. Craig was previously a teacher, assistant principal, and principal. Craig helped develop and implement a Student Needs Fund in his district, which is supported 100% by local donations and is used to help students and families in need. This fund has been used in the past to pay for student activities like field trips, clothing, and college admission fees, in addition to family needs including housing expenses, utility bills, and food assistance. Through his dedication and stewardship, the Upper Scioto Valley School District has been able to provide students and their families with critical financial support for over a decade through this fund.

Jessica Parthemore

Jessica Parthemore is the Principal of Ridgedale Elementary School in the Ridgedale Local School District. She holds an M.A. and Ed.S. and has a specialization in Middle Childhood Education. She has held a variety of administrative positions in education, including a Team Lead, Athletic Director, and Assistant Principal.

During her tenure as principal, Jessica has overseen tremendous improvement in academic achievement and student behavior. Year over year, math scores have increased by 10 percentage points and reading scores have increased by 4 percentage points. This is shown most prominently in the 3rd

grade reading proficiency scores in the 2022-23 school year, where the fall to spring score improvement was the biggest in school history. To sustain this growth, Jessica has instituted 21st Century Programming before and after school and has partnered with her county's YMCA to provide additional summer learning and after school activities. To address student behavior challenges, Jessica brought on a Home-to-School Liaison to improve student attendance through addressing behavioral concerns, home environment challenges, and other barriers. This liaison has established a check in/check out system with students that are struggling with attendance and worked with families to address student needs. As a result of these efforts, the chronic absenteeism rate in her school building has dropped by double digits over the past year. Her dedication to improving student achievement and wellness has brought immediate improvement to her school and community.

Amanda Blanton

Amanda Blanton is the Assistant Principal of West Union Elementary School. She has her M.A. with a specialization in K-8 Elementary Education, is certified to teach grades 4-9 Math and Science, and has Principal Licensure for grades K-12. Amanda has served on teacher-, building-, and district-leadership teams, as Teacher Leader and STEM Coordinator, and has been honored as an Outstanding Curriculum Provider. Previously, Amanda worked as a Teacher, District Data Coordinator, and Curriculum Director and School Improvement Supervisor.

At the school level, Amanda noticed the need for more mental health counseling support in her school building. Amanda partnered with local health service providers to come to her high school and help her students. This program saw a lot of success and reduced disciplinary incidents significantly, leading to the entire district partnering with UC Health and providing these services districtwide. Consequently, this led to a reduction in disciplinary incidents and out of school suspensions at the school and district level. More recently, Amanda has sought to bring in more opportunities for students through grants. She has been able to provide character building assemblies, character through magic lessons, STEM weekly after school clubs, and extended field trips for her students. The STEM clubs have been especially popular among students and families, and the school has been granted support from the district to fully convert into a STEM Designated School. Through the conversion of this school, Amanda seeks to provide a more immersive school experience for her students.

Benjamin Schade

Benjamin Schade is the Director of Pupil Services for Pymatuning Valley Local School District. In his role, he oversees several districtwide departments: Early childhood/Preschool, Special Education and Section 504, Curriculum and School Improvement, and State/Federal Grant Compliance, including McKinney Vento. He was formerly a School Psychologist and holds a B.A. in Psychology, an M.Ed. in Intervention Services, Ed.S. in School Psychology, and has a Principal License Certificate.

As the Director of Pupil Services, Benjamin has worked with other district leadership members and teachers to expand access to early childcare and preschool, provide a continuum of services and placement options for students with disabilities, and enhance career and technical education. He also is working to select and implement high quality instructional materials for literacy and math with onsite teaching. This task includes training 9 teachers to become structured literacy/dyslexia specialists, training the leadership team on sustaining school improvement efforts, and developing a Student Data

Dashboard that tracks and aggregates students' risk. As a result of these efforts, preschool enrollment has increased to 97% capacity, the number of early childhood education grant slots (i.e., preschool scholarships) increased from 32 to 40, all income-eligible families can send their children to preschool and daycare free of charge, and the preschool program has been certified as an Inclusive Child Care Program (ICCP) due to its efforts to fully integrate preschoolers with disabilities. To better serve students with developmental disabilities, he has worked with the Ashtabula County ESC to house two autistic units and three classrooms for students with developmental disabilities. Further efforts have also led to an expansion of his district's career-technical and agricultural education programs and implementation of new literacy curricula that has already improved literacy achievement from pre-pandemic levels.

Ellen Adornetto

Ellen Adornetto works for the Ohio Education Association's Education Policy, Research, and Member Advocacy (EPRMA) Department. In her current role, Ellen works with districts based on their specific needs, but a substantial portion of the work is related to Title I, EL teacher quality, and instructional practice topics. Previously, Ellen was a classroom, reading intervention, and math intervention teacher and held a grade PreK-8 teaching license and a K-12 reading endorsement. She also has an M.A., with coursework completed for TESOL endorsement.

Throughout her career, Ellen has been recognized for her many contributions as a teacher, interventionist, and OEA representative. As a classroom teacher, she received the Building Teacher of the Year Award, served as the chair of her Local Professional Development Committee (LPDC), held a Master teacher designation, and served as cooperating teacher for pre-licensed candidates. She was also a cowriter for the Ohio Reads Award, which ended up netting her district \$50,000 and has contributed to several other successful grant requests. Currently, Ellen serves as professional staff on many OEA committees, including the Human and Civil Rights and Professional Issues committee, and collaborates with other stakeholder groups including administrative representatives.

Robert Kuehnle

Robert Kuehnle is a School Business Official for Black River Local School District. He has a M.A. in Business Administration and is dedicated to leveraging his position to help improve outcomes of students, particularly those from traditionally underserved backgrounds.

Trissa Schimpf

Trissa Schimpf is the Home to School Liaison for Ridgedale Local School District. She has a B.A. in Child and Youth Studies and is dedicated to leveraging her position to help improve outcomes of students, particularly those from traditionally underserved backgrounds.

Small Town Typology Panel 1 Biographies

Jared Bunting

Jared Bunting is a School Business Official for Jackson City School District. He previously served as the District Treasurer and CFO for Trimble Local School District and has a B.A. in Accounting Finance and Business Administration.

Throughout his career, Jared has been continually active in the Ohio Association of School Business Officials (OASBO) and has leveraged his financial expertise to help students from economically disadvantaged backgrounds. He has served OASBO as an OASBO Foundation Board Member, Southern Valley Chapter President, Legislative Committee Chair, and Southeast Regional Director, has been recognized by the organization as an International Certified School Finance Official, and was awarded the Southeast Region Distinguished Service Award and Emerging Leader Award in 2018. He is currently an Ohio Fair School Funding Plan workgroup member, where he co-chairs the Distribution Committee and Analysis Committee. In his prior role as a Treasurer/CFO for Trimble Local School District, he worked with district administration to invest in summer enrichment programs for students, which aided credit recovery and graduation rates for seniors. Jared also implemented a program that eliminated fees in classes that historically required them (e.g., Wood Shop and Small Engine Repair) and aided in the development of a student wellness center to help service the entire community. At his current district, Jared has continued using his knowledge of finance to help economically disadvantaged students. He has worked with the food service department to eliminate debt fees and joined the Community Eligibility Provision from the USDA to provide free school breakfast and lunch to all district students, thus reducing the stigma faced by student identified as receiving free or reduced price school meals. He also accessed federal funding to expand a school wellness clinic, providing convenient and timely health services for students, staff, and community members.

Hannah Milleman

Hannah Milleman is a Teacher at Dover City High School. She has a B.S. in Education and is currently pursuing an M.S. in Psychology. Previously, Hannah worked as a Newcomer Academy educator and science educator.

Although she has not worked in education long, Hannah has made a significant impact. She is a strong advocate for the Newcomer Academy for her district and helped develop its curriculum. This academy is designed specifically for students who endured interrupted education and are ELL, and is crucial to the school immersion process for students who previously faced interrupted education. Additionally, Hannah serves as the advisor and creator of her school's Alliance of Sustainability and started the recycling program in her high school. She is also the Co-Advisor for the Class of 2026.

Colleen Mudore

Colleen Mudore is the Principal of Knollwood Elementary School. Previously, Colleen served in a variety of roles including Special and General Education teacher, International Baccalaureate Coordinator, and Assistant Principal. She holds an M.A. in Elementary Education and is certified in K-12 Special Education and Administration. She is also the District Coordinator for PBIS and Ohio Association of Elementary School Administrators (OAESA) Zone Director.

As a school leader, Colleen has implemented innovative initiatives and shown an unwavering commitment to enhancing the educational experience and well-being of all students. Colleen spearheaded the creation of a "Care Closet" in her school, a resource available to all students throughout the county. It provides students with essentials items, including clothing, school supplies, and personal care products. In addition to providing these immediate needs, the "Care Closet" has fostered a supportive and inclusive school environment. Colleen has also taken steps to address food

insecurity among her students by serving on the district food pantry committee and advocating for expanded access to nutritious foods for students and their families. Due to her passion for promoting literacy and love of reading, Colleen was instrumental in securing a grant that was used to purchase a book vending machine, allowing any student to own a new book, regardless of their economic background. She also established a Little Lending Library for students to promote reading outside of the classroom. In an effort to provide environmental and sustainability education, she created a school garden. Administratively, Colleen has secured five years of grant funding to hire a mental health and wellness coordinator and improve mental health resources and services for her students and is an active member on the district's wellness and PBIS committees.

Jordan Nelson

Jordan Nelson is a Social Worker for the Mount Gilead Exempted Village School District. He has his M.A. in Social Work and has previously served as a Teachers Aide, Case Manager, and Group Therapist.

In his district-level Social Worker role, Jordan utilized programmatic and systematic approaches to track and evaluate homelessness, bullying and harassment, and threat assessment in his school district. He noted the lack of formality to the care and consideration of these issues and made a concerted effort to formalize the tracking and evaluation process and secure buy in from staff and families involved. Jordan is a strong advocate for mental health and received the Key Holder reward from the local Board of Mental Health of Delaware and Morrow Counties for his service.

Mary Ann Rosser

Mary Ann Rosser is a principal at the A+ Arts Academy – Napoleon Campus. Previously, she served as the Regional Special Education Coordinator. Rosser has an M.A. with specializations in Special Education, Educational Leadership, and Curriculum and Instruction.

Throughout her career in education, Rosser has created countless intervention plans to improve the academic performance of students with IEP's, economically disadvantaged students, and students identified as being low performing students. As the principal of A+ Arts Academy, she has implemented a reading and math intervention program designed to help students bridge the gap between their current performance level and expected performance level.

Marie Ward

Dr. Marie C. Ward is the Superintendent of the Fairfield County Education Service Center. Previously, Dr. Ward was the Director of Disability Services at the University of Nebraska, Acting Superintendent at the Delaware-Union ESC, and Assistant Superintendent at the ESC of Central Ohio. Throughout her distinguished career, Dr. Ward has been invested in the development and administration of various research-based programs that serve vulnerable students. These programs include the Delaware-Union Homeschool Liaison Program, Ohio Reading Corps, Zoo School, The Arts Academy, The Kessler Horse Farm, Ventures Academy, Prep for Success, The FAST Forward Success Center, and InnevAto EDU.

In the course of her career, Dr. Ward has received numerous awards, recognitions, and committee appointments. She received numerous awards for her work, notably the United Way Opening New Windows Award in 2003 for innovative programming for at-risk youth, the American School Board Journal Magna Award in both 2005 and 2006 for the development of the Columbus Zoo and Aquarium School and Ventures Academy, and Exemplary Educational Leadership Award from the Buckeye Association of School Administrators in 2019. Additionally, Dr. Ward has served on multiple committees as both a member and chair, including the OESCA Executive, Membership and Special Events, and Critical Issues Committees, Buckeye Association of School Administrators SEC and Special Education Committees, and the Fairfield County Alcohol, Drug Addiction, and Mental Health (ADAMH) Board as a member of the Opiate Taskforce, among several other appointments. Dr. Ward grew up impoverished and is a first generation American and college graduate who has dedicated her life to helping children who faced similar challenges.

Edward Weber

Edward Weber is the Superintendent of Wellington Exempted Village Schools. He has an M.A., and has his Superintendent, Treasurer, Principal, and Math and Computer Science instruction licenses. Previously, Weber served as a high school math teacher and high school principal. As an administrator, Weber improved his current district from a D/F rating to as high as 4.5 starts, moved Cleveland High School to “excellent” status, and received the Principal Excellence Award in the Cleveland Metropolitan School District. While serving in the Cleveland Metropolitan School District, Weber helped run a successful bimonthly Saturday School program that helped students improve academically. In his current, small town district, Weber was able to partner with the Boys and Girls Club and College Now of Greater Cleveland, which has also bolstered student success.

Peter Ziehler

Peter Ziehler is a Teacher at Northridge High School in Northridge Local Schools – Montgomery County. He has an M.Ed. and Special Education certification. Peter is dedicated to leveraging his position to help improve outcomes of students, particularly those from traditionally underserved backgrounds.

Small Town Typology Panel 2 Biographies

Jeremie Hittle

Jeremie Hittle is a School Business Official for Piqua City Schools. Previously, Jeremie was a Social Studies teacher and has his M.Ed. in Leadership. For his work as a School Business Official, Hittle was awarded the Auditor of State Award with Distinction. This award, given by the Auditor of State, distinguishes the auditors who send in “clean” audit reports, that is, on-time reports that contain no mistakes nor need for revision. With financial assistance from the Disadvantaged Pupil Impact Aid (DPIA) fund, Jeremie is dedicated to serving economically disadvantaged students in any way he can.

Frank Major

Dr. Frank Major is the Assistant Superintendent of Midview Local Schools. He has a bachelor’s degree in technology education, master’s degrees in Curriculum and Instruction and Educational

Leadership, and an Ed.D. in Educational Leadership. Dr. Major has served various roles in education, including teacher, principal, director of personnel and operations, and director of curriculum and instruction. As an administrator, Dr. Major has been awarded Ohio's Project S.O.A.R Award for Student Growth and Achievement in 2016 as the principal of Milkovich Middle School and was awarded over 2.4 million dollars' worth of local, state, and federal grants in the 2021-22 fiscal year alone to improve and expand education programming for Midview Local Schools. He also is a member of several professional organizations, including the Ohio Association of School Personnel Administrators, Buckeye Association of School Administrators (where he also serves on their Report Card, Legislative, and Diversity Committees), and the Ohio Association of Secondary School Administrators (where he also serves on the Instructional Leadership team). Additionally, Dr. Major formerly served a member and treasurer for the Cleveland Area Minority Educators Recruitment Association (CAMERA), an organization that seeks to recruit and hire minority education candidates to work in partner schools.

Dr. Major has dedicated his career in education to helping serve students from traditionally underserved backgrounds. In his current district, Dr. Major has spearheaded initiatives aimed at enhancing the academic success of economically disadvantaged students. He has implemented after school and extended year programs, which have helped narrow the achievement gap and improve overall student performance. He has also been instrumental in developing and implementing specialized programming, including STEM clubs and project-based learning labs that students have found engaging and inclusive. Further, Dr. Major has implemented PBIS to promote a more positive school climate and improved his district's data-driven decision making processes to better support student learning and wellbeing.

Tim Sies

Tim Sies is the Superintendent for Clermont Northeastern Local School District. Tim has held several other positions in K-12 education, including coach, teacher, assistant principal, principal, secondary campus director, director of positive school culture and safety, and assistant superintendent. He currently holds a B.A. and M.A. in Music Education, M.Ed. In Educational Leadership and is a doctoral candidate in Educational Leadership. Throughout his career, Tim has held several important leadership positions, including a facilitator for the Ohio Leadership Advisory Council (OLAC) facilitator, OPES, OTES, and OSCES credentialed evaluator, Master Schedule Specialist for EduLead LLC, and is Capital Essentials certified. He has served on several committees including the BASA Department of Higher Education and Diversity Committees, the Hamilton County Juvenile Justice Taskforce, and leads his district's Discipline and Disproportionality Committees.

During his career, Tim has spearheaded several initiatives designed to enhance the education landscape for all students, particularly those from underserved backgrounds. While at Cincinnati Public Schools, Tim helped implement targeted coaching and an MTSS program and led initiatives that significantly reduced exclusionary practices and improved student engagement and achievement. As an administrator, Tim partnered with local community organizations and health providers to bring essential services like medical care to students, which enriched school culture and student wellness. Furthermore, through his leadership, he was able to reduce the staff turnover rate at North College Hill Middle and High Schools from 60% to approximately 2% by fostering a work environment centered on high-quality professional development, appreciation, and a strong sense of community. He also overhauled the

academic schedules and curriculum at North College Hill Middle School, improving their school performance rating from an F to a C on the state report card. Despite all of his accomplishments, Tim is still driven by his ongoing mission to learn, grow, and lead initiatives that make a tangible difference in the lives of students, educators, and communities.

Carla Shaw

Carla Shaw is the Superintendent of London City Schools. She has her M.A. and has Superintendent Licensure. Carla has worked in various roles in education, including as a coach, teacher, assistant principal, director of virtual programs, and assistant superintendent.

Throughout her career, Carla has dedicated herself to supporting at-risk students. She has facilitated numerous attendance, discipline, and graduation planning meetings to provide guidance and resources to help students overcome challenges and achieve their academic goals. Currently, she is actively involved in collaborating with her food service coordinator and overseeing transportation services, to ensure logistical processes are efficiently managed to support student needs. Additionally, Carla plays a pivotal role in her district's Credit Recovery program, working closely with students to help them regain academic momentum and successfully progress towards graduation. Her commitment to the success and well-being of at-risk students remains steadfast, and she is dedicated to continuing to make a positive impact on students' educational journeys.

Foresta Shope

Dr. Foresta Shope is the Superintendent of Sciotoville Community School. She has her Ph.D. in Cognition and Instruction. In her career, Dr. Shope has worked in several different academic positions, including teacher aid, teacher, and principal. She has been inducted into the South Webster High School's Hall of Fame for Contributions to Education, Community Service, and Entertainment, is on the Shawnee State University's School of Education Advisory Council and supports the Growing Rural Independence Together (GRIT) project.

Dr. Shope grew up under adverse circumstances and has dedicated her entire career to serving students and families from underserved communities. Dr. Shope initially started as a middle school teacher at Sciotoville Community School and then became the principal. Soon after, parents with elementary-aged students wanted this school to add an elementary program. This encouraged Dr. Shope to write her first grant to create such a school, and in 2008, the elementary academy opened its doors. Now as the Superintendent of Sciotoville Community School, Dr. Shope has since earned her Ph.D. and proudly shares her story to show others that they too can live their lives with purpose. Since becoming the Superintendent, Dr. Shope and her staff have raised their school's graduation rate to an "A" each year and implemented a GRIT program to motivate and encourage students to set goals for themselves after high school. She has also instituted a free breakfast and lunch program at her school, secured a Chromebook for each student, developed a partnership with Community Action to provide free after school snack and hot meals for students, and developed a partnership for a mobile health clinic at her school open to students and community members.

Melisa Viers

Melisa Viers is the Principal of Cardinal Stitch Catholic High School and Academy, which is a private school within the Diocese of Toledo. Previously, Melisa was a special education teacher. She has her M.A. with specializations in Special Education and Curriculum and Instruction, and an Ed.S. in Administration. As a school leader, Melisa was the driving force behind the Early College Career Pathway at her school. This pathway created a dual credit program so that students may earn a certificate or associate's degree upon graduation, and the program is partnered with area colleges and universities that offer degrees in high-demand career fields that will quickly meet workforce needs within northwest Ohio. This program aims to help students prepare for in-demand jobs post-graduation and provides employers with a pipeline of talented and certified job seekers.

Suburban Typology Panel 1 Biographies

Zeb Kellough

Zeb Kellough is the principal of Crim Elementary. He has his Ed.S., with specializations in Curriculum and Instruction and Administration. He was formerly a science teacher, curriculum chair, assistant principal, and elementary education coordinator. As a science teacher at the Toledo School for the Arts, Zeb was awarded the Teacher of the Year. In 2018, his district was the OLAC District of the Year, and as part of the districtwide equity team, Zeb was one of six who received the award and was recognized. He is also on the Advisory Board for the Education Department at Bowling Green State University.

Throughout his career, Zeb has been involved in various initiatives to serve students from economically disadvantaged backgrounds. While at Toledo School for the Arts, he helped create an afterschool tutoring plan for middle schoolers who were struggling with reading; this program was later expanded to include math and writing. In his current district, Zeb worked as the elementary curriculum coordinator and led data team meetings to go through the 5 step cycle of identifying low performing students and developing targeted interventions to improve their abilities. He later transferred to the position of principal at Crim Elementary, where he has continued to spearhead initiatives to help economically disadvantaged students and families, including providing weekly "food boxes" for families, facilitating an afterschool tutoring program, and providing adult classes to help parents with their parenting skills and help them earn their GED, if applicable. Zeb proudly notes his school's ELA and Math scores have been trending upward during his tenure.

Jesse Hosford

Jesse Hosford is the principal at Woodridge Middle School. He has his M.A. with a specialization in K-12 Physical Education, has K-12 Principal Licensure, and is on his district's leadership team. Previously, Jesse worked as a Middle School PE Teacher and Assistant Principal. Jesse is continuously working to expand services to his school community. Currently, addressing achieving gaps within subgroups, attendance issues, and graduation rates have been the focus of his school improvement teams. He has also been working with State Support Team 8 and his ESC leadership to identify early warning indicators that can help target students who need interventions, while also continuing to push his students who are not struggling.

Christine Cook Poetter

Christine Cook Poetter is a School Business Official for Princeton City Schools. She has her B.A., is the District Treasurer and CFO, and previously served as the Assistant Treasurer. She works closely with her district's Director of Student Services to better serve the high percentage of students in the district who are economically disadvantaged.

Tonya West Wright

Tonya West Wright is the Assistant Superintendent of Curriculum and Instruction at Princeton City Schools. She has her M.A. and has previously worked as a Principal, and Director of Teaching and Learning. During her tenure at Princeton City Schools, the district has made tremendous strides in academic growth, with the district growth being measured at five stars for the past two years. West Wright continues to dedicate herself to maintaining this growth and continuously improving academic attainment for students in her district.

India Richardson

Dr. India Richardson is the principal of Symmes Elementary School. Dr. Richardson has a doctorate in Leadership for Organization, Ed.S. in Administration and Supervision, and an M.A. in Elementary Education. She is a Teach for America alum and has worked as a math teacher, math content specialist, and director of academics. Through her career, Dr. Richardson has received numerous awards including a Teach for America Spotlight – Black Changemaker in Ohio, Teacher of the Year Award, PREPS Award for High Student Performance in Mississippi, and has served on Administrator Onboarding and Master Schedule Committees.

In her career as a teacher, Dr. Richardson has continually sought to help students grow academically and socially. She exceeded district and state rating for student growth and proficiency based on the annual state math assessment for eight consecutive years. She also served on the Response to Intervention (RTI) and School Leadership teams and started a Saturday School Program. Later, after transitioning into an administrator, Dr. Richardson served as a math content specialist, where she used her expertise to help and coach math teachers in her district. Later, as a principal, Dr. Richardson transformed her school's professional learning process, contracted with her local ESC to build cultural awareness and proficiency, and collaborated with school counselors to create an African American mentorship program, pairing high school seniors with elementary students to model Black excellence for younger students. In addition to her success as an administrator Dr. Richardson recently received her doctorate in Education Leadership and wrote an article for the National Association of Elementary School Principals (NAESP) on how assistant principals can foster equity in their leadership.

N'ecole Ast

N'ecole Ast is the Superintendent of Woodridge Local School District. Ast has her M.A., is certified as a mild/moderate and moderate/intensive intervention specialist for grades K-12 and has her Principal K-8 and Superintendent Licensure. She has held several different positions: paraprofessional, intervention specialists, behavior/autism specialist, director of special initiatives, director of professional development, director of student services, and director of pupil services. Ast has also been recognized

for her work in school-based mental health care with the Red Oak Courage Award from Red Oak Behavioral Health.

Ast has extensive experience in educational development and a proven track record in enhancing student outcomes, especially for those from traditionally underserved backgrounds. To this end, Ast has been instrumental in setting up structures designed to identify at-risk students early on by coordinating with key personnel to tailor support that addresses each student's unique needs and consistently evaluating the effectiveness of these interventions. Additionally, she spearheaded the creation of an extended school year program specifically designed for students with qualifying special education needs. In her current role, Ast expanded her district's leadership team to intensify our focus on districtwide goals related to attendance, academic achievement, behavior, discipline, and student wellness. Further, she helped implement a comprehensive graduation study to identify at-risk students and provide them the support they need to graduate and incorporated a universal screener at transition grade levels to help students transition to the next grade by preemptively addressing their needs.

Michelle McClintic

Michelle McClintic is Supervisor/High School Administrator for the Lorain County Joint Vocational School. Michelle has her master's in educational and counseling psychology, and has a Transition to Work Endorsement, is certified as an Intervention Specialist, and has her Superintendent Licensure. In her career, Michelle has held several roles serving economically disadvantaged students, including working in a day treatment/mental health facility, and serving as the Transition Coordinator for her local ESC, an instructor and coordinator for Project Search, and a Counselor and Intervention Specialist. Currently, Michelle directly supervises 17 different career technology labs, is responsible for the supervision of all classroom support staff and student organizations and supervises the MTSS and tiered support systems in her school building.

Now, Michelle is focusing her efforts on expanding wrap-around services to economically disadvantaged students, to help comprehensively address their needs. Through collaboration with school counselors, administrators, and social workers, she has helped to institute regular "red flag" meetings to identify student needs not being met and create action plans to support them. She has also partnered with parents, social workers, and outside agencies (e.g., The Ohio Commission on Fatherhood and Place to Recover Training and Resource Center) to establish support groups for families. Additionally, Michelle has worked closely with her Associate Principal and Superintendent to initiate a monthly young men's group (run by the Superintendent) that helps foster a sense of belonging and community among economically disadvantaged make students and has partnered with Big Brothers and Sisters through their Big Futures program to provide after-school tutoring, mentoring, and fellowship at no cost to students and free transportation. She is also actively pursuing grant funding to develop a driver's training program to increase access to driver's education for economically disadvantaged students and seeking to bring on a Behavior Specialist to help support her school's MTSS system.

Jeanne Hornberger

Jeanne Hornberger is an elementary school teacher at Clough Pike elementary school. She has her M.A. and was formerly a substitute and reading teacher. Currently, Jeanne is a Master Teacher and is on her school's building leadership team. She has spent much of her teaching career working with

economically disadvantaged students and dedicated to helping them succeed. She often spends extra time working with students that have severe behavior issues and is currently helping a 4th grade student, who does not know how to read due to severe behavior issues in younger grades, learn to read by collaborating with them before school. Hornberger believes in the potential of all students and is dedicated to helping students that need it the most.

Denise Morgan

Denise Morgan is an elementary school teacher at Morrison-Gordon elementary school. She has her MA in Reading and currently teaches third grade. In addition, Denise is the 3rd grade leader for her school's Curriculum Implementation Team and serves as the AEA Vice President. As an educator, Denise strives to improve the outcomes of her students. She and her team intervene early, and daily, when they notice students have fallen behind. Denise also communicates regularly with her student's families to keep them involved in their child's learning. She also frequently collaborates with her school's outreach worker to contact families when she notices her students are struggling with their attendance, food insecurity, or experiencing hygiene issues. Denise is wholeheartedly dedicated to her student's wellbeing and works hard to show students she is an adult who strongly believes in their success.

Diana Maher

Diana Maher is the Assistant Treasurer at Beachwood City Schools. She has her BA in Early Childhood Education, MA in Educational Leadership, and has her Treasurer's License. Previously, Diana has served as teacher, interventionist, and assistant principal.

Diana has spent significant time investing in increasing outcomes for students who come from economically disadvantaged backgrounds. As a teacher, she saw firsthand the unique challenges faced by this population, specifically how the Third Grade Reading Guarantee (TGRG) (a statewide assurance that all students will be on track to reading success by the end of third grade) was impacting students and their families. Upon moving to assistant principal, Diana used this knowledge to work with her school's K-3 Reading Teams to implement school wide programs focusing on proactively approaching the TGRG. Currently, Diana uses her financial expertise to help her school get the most out of their available budget.

Urban Typology Panel 1 Biographies

Florence Massella

Florence Massella is an elementary school teacher at Bluestone Elementary School. Florence has her MA with specializations in K-8 Elementary Education, K-12 Specific Learning Disabilities, and K-12 Administration. She has worked in many different educational capacities, including as a teacher, instructional coach, elementary curriculum director, director of data and assessment, and principal. She has been a member of her district's curriculum council and served as a co-facilitator of her district's leadership team. Also, she participated in the First Ring Leadership Academy and Educational Policy Fellowship Program through Cleveland State University. Currently, Florence is an active member of her school's leadership and assessment teams, co-facilitator of Boys Group, and leads the One Book, One School Committee.

Throughout her career, Florence has led several successful programs at both the building and district level. As a teacher, she led the implementation of an “adopt a student” program, which paired students with behavioral concerns with a trusted adult in the building. This program resulted in decreased referrals for these students. Additionally, Florence spearheaded department wide common assessments, based on state standards, that she subsequently analyzed and used as a tool to improve instruction. In another instance, Florence implemented data analysis protocols with district, building and teacher leaders, which resulted in an increase in achievement scores on diagnostic and state test. She has also organized and designed programming for after school tutoring and summer instruction to focus on students’ literary needs. She has also led multiple curriculum committees for choosing and implementing curricular materials in math and literacy. Currently, Florence continues to serve economically disadvantaged students, working as an Intervention Specialist. This year, she is leading an initiative to improve attendance by implementing a monthly reward system for students with positive attendance, daily tracking of attendance in each classroom, and instructing families about the importance of attendance.

Melissa A. Matlack

Melissa A. Matlack is an elementary school teacher at Parkmoor Elementary school. Melissa has her MA and is currently a member of her building’s leadership team and a senior faculty representative. Additionally, she earned a Wallace Foundation Equity-Centered Principal Pipeline grant from Columbus City Schools and Ashland University and is currently studying to become an administrator.

Throughout her career, Melissa has been dedicated to serving students from economically disadvantaged backgrounds. As a teacher, she advocates strongly for her students and provides them emotional and educational support before, during and after the school day. She has also served as leadership chair for several academic and cultural initiatives that have led to improvements in student behavior, attendance, academics, and responsible technology use. Currently, her school is a “Leader in Me” school that has won multiple awards from the state Ohio for their use of PBIS. She has introduced yoga to her students as a way to help them be calm and focus and continues to find other ways to help her students in and out of the classroom.

Tammy Solomon-Grey

Corey Yoakam

Cory A. Yoakam Ed.D. is a principal at the Academy for Urban Schools in Youngstown, Ohio. He holds several degrees, including a B.S. in Special Education, M.A. in Curriculum and Instruction, and a M.Ed. and Ed.D. in Educational Leadership. Previously, Dr. Yoakam worked as an Intervention Specialist, President of South Range Local Board of Education, Director of School Safety and Violence Prevention, and Special Education Director.

Throughout his career, Dr. Yoakam has demonstrated an ability to promote student success. In his current role, he has seen his school’s attendance increase consistently over his tenure. As a Special Education Director, his department raised academic scores by 20% compared to same age typically developing peers. He also oversaw a drastic reduction in suspensions. Further, in his tenure as a Director of School Safety and Violence Prevention, Dr. Yoakam implemented programming that reduced

bullying/cyberbullying and threat assessment teams and PBIS programs that dramatically improved student behavior.

LaShawn Graham

LaShawn Graham is the Director of Federal Programs at Dayton Public Schools. He has his A.A.S. in Business Management and a B.S. in Organizational Management. He has held several administrative positions in his career, including School Secretary, Account Clerk, Administrative Specialist, State and Federal Coordinator, Grants and Compliance Specialist, and Grants Management Coordinator. Graham serves on his district's Leadership Team and Finance Committee. He has also been awarded the Leadership and Dedication Award from the National Association of Federal Education Program Administrators (NAFEPA). As a Director of Federal Programs, Graham is responsible for effectively implementing programs that serve all of his district's students and ensuring that the grants are compliant and follow their intent and purpose to meet the needs of students. Accordingly, he has overseen the implementation of several districtwide programs that have had a positive impact on academic achievement, attendance and overall student wellness.

Carrie Cofer

Carrie Cofer is a teacher at the Rhodes School for Environmental Studies. She has her M.A. and is certified in Adolescent and Young Adulthood English Language Arts instruction by the National Board for Professional Teaching Standards (NBPTS). She also holds many leadership positions, including College Board AP Fellow, Ohio Master Teacher, Resident Education Mentor, and Department Chair of the English Department and Grade 10 Lead at her school. She is also the Lead Professional Educator for English in grades 7-12 and Computer Technology for grades K-12.

In addition to her teaching responsibilities, Carrier is the only Speech and Debate Coach in her school district. As a coach, she has had students qualify for the State Tournament with the Ohio Speech and Debate Association and helped them develop critical thinking, writing, and presentation skills. Concurrently, Carrie is writing her dissertation on Teacher Digital Competence and the need for a Digit Citizenship curriculum in K-12. Carrie has also worked with the Advanced Placement program at her school to prepare students for college and beyond. Additionally, Carrie was a founding member of the Rhodes School of Environmental Studies, where she still teaches. Initially, she helped design and implement the structure of the school and classes and developed programming to help close the achievement gap during the school year. Carrie has also worked with the Academic Achievement Committee to diagnose and implement changes to the school to help students with their academics and social emotional learning. She also provides tutoring for students, analyzes academic data to examine where students need further intervention and work with the other 10th grade teachers to implement instruction change, and is developing ways to increase attendance.

Jana Wolfe

Jana Wolfe is the Assistant Superintendent for Mt. Healthy City Schools. She has her M.A. in Leadership and Technology and holds a Superintendent License. During her career, she has taken on several roles within education, including Teacher, Assistant Principal, Principal, and Elementary Coordinator. She has served as a leader on Teacher Based Teams, has been nominated for Teacher of the

Year, led Formative Instructional Practices (FIP) initiatives in her district, and wrote and was awarded a Striving Readers and Comprehensive Literacy School Development grant from the U.S. Department of Education.

Jana has spent most of her career serving economically disadvantaged students. As an Elementary Coordinator, she led the district in transitioning from a balanced literacy to science of reading approach to better serve her students. She has also helped improve attendance throughout her district by adding Tier 1 plans in each building as a preventative measure and strengthened systems and process around the completion of Tier 2 plans and referrals. She leads the district leadership team and her district's academic team, which analyzes student data to determine steps to improve student outcomes. Two years ago, Jana led the process for conducting her school's needs assessment and developing a plan based on assessment outcomes. She also provides professional development to colleagues on the impact of poverty on children's brains and how to mitigate these effects.

Michelle Robb

Michelle Robb is a teacher at East Technical High School. She has her M.A. with specializations in Computer Science grades K-12, Math grades 7-12, and Math and Science grades 4-12. She has been nominated as a Teacher of Excellence and is currently her Union Chapter Chair on her school's Student Support Team and Academic Progress team. Michelle has spent her entire teaching career serving students from economically disadvantaged backgrounds and is dedicated to supporting her students to help them reach and achieve their goals. In her role on the Student Support Team, Michelle has worked hard to support struggling learners through academic, behavioral, and emotional interventions. She was also instrumental in creating the intervention course for students who have not met competency in Algebra and helps students with credit recovery.

Julie Garcia

Julie Garcia is an elementary school teacher at Lorain City Schools. She has an M.A. with specializations in Foundations, Keys to Literacy, Curriculum and Instruction, and K-12 Reading. She has served on several committees, either as member or president, including the LCS Titan Family Committee, District Special Education Committee, District Strategic Plan Leadership Team, Blessing House Board of Directors, NEOEA Board of Directors, OEA Board of Directors, and Lorain Education Association.

Throughout her career, Julie has worked to improve outcomes for economically disadvantaged students. She wrote a grant to implement family literacy nights and then oversaw the development of that program. As a Board Member for the Blessing House, a home that provides emergency services for families, Julie helps with fundraising events and provides services for children that live there. Julie has also participated in after school tutoring, extended year programming, early start programs, and transitional classrooms. She has also co-taught in classrooms with English language learners and hearing impaired students. Additionally, Julie has worked with her district's leadership team to improve attendance, address student behavioral issues, and teacher wellness. She has implemented a PBIS program at each school within the district and has written grants for wellness activities which are used to support teachers. She also participated in her district's reading curriculum adoption process and advocates for students with disabilities and their teachers through serving on the Special Education Committee.

Heidi Yocum

Urban Typology Panel 2 Biographies

Aaron Lusk

Aaron Lusk is the Superintendent for the Maritime Academy of Toledo. He has master's degrees in international relations, Education, and Educational Administration, has a specialization in instruction for Social Studies grades 7-12 and as an Intervention Specialist for grades K-12, And has his PreK-12 principal licensure. Aaron is a Marine Corps veteran and has worked as an Intervention Specialist, Dean of Students, and Principal. He is also the co-leader of the City of Toledo Youth Engagement Group and was the WTOL Leader in Action for March of 2023.

As an educator and administrator, Aaron is a firm believer in diversity. The Maritime Academy of Toledo is the second-most diverse school in the entire region (after being the most for the previous 4 years). Also, his school staff is more diverse than many other schools in Ohio with 40% of staff representing a minority group. Aaron has also made an impact in other ways. His school is currently in the running for a bronze award for PBIS implementation in Tier 1. The Maritime Academy of Toledo has also seen student behavior improvement under his stewardship, with the number of out of school suspensions decreasing from 177 in 2013-14 to 18 in 2018-19, despite adding over 100 students to the school. As an Intervention Specialist, Aaron saw 12 out of his 14 students with special needs pass all five of their Ohio Graduation Tests (OGT). Additionally, as a strong advocate for student's mental health, Aaron developed an in-house mental health service provider at his school in 2015.

Ashley Hall Green

Ashley Hall Green is currently the principal of East Academy (014187). She has her M.Ed. in School Leadership. Ashley has served in many different roles in education, namely as a teacher, Dean of Students, Director of Curriculum and Instruction, and principal.

Ashley has spent her entire career working with students who are economically disadvantaged in three different states. As a Dean of Students, Ashley implemented an engagement initiative to better keep students on task and reduce her school's accumulating disciplinary incidents and worked directly with teachers to train them how to truly understand their students as a Director of Curriculum and Instruction. Upon becoming a principal, Ashley began to notice that the reason her students were struggling was because their basic needs were not being met. In a particularly tragic year as principal, Ashley lost 9 students to gun violence, despite providing food and wraparound/mental health services. She discovered that the deaths occurred after the school day ended, so she took it upon herself to learn how to research and write grants to fund the programs she desired. Through her hard work, she was able to secure funding and was able to develop and after school program students enjoyed and pay staff a stipend to run it. Additionally, she has written other successful grants that have provided resources such as school uniforms and add a washer and dryer for students to use. Through another grant, Ashley was able to turn her school's basic Science classroom into an awesome STEM lab. Further successful grant applications led to the development of after school graphic design, woodshop, and hair braiding classes taught by professionals within the community and to bolster PBIS efforts which has resulted in a significant decrease in suspensions. Ashley has also hired a school/family based liaison to help students

and families access vital resources including transportation, shelter, food, clothing, and financial and mental health support. Ashley has identified safety as the greatest resource educators can provide and she is determined to keep finding funding to support the safety of her students.

Stephanie Baker

Kris Beasley

Kristopher Beasley is the principal of Mansfield Senior High School. He has his M.A. and has a specialization in K-12 students with mild to moderate disabilities. Before moving to the administration, Kristopher worked as a Special Education and General Education teacher. As an administrator, Kristopher has been directly involved in improving attendances in grades 7-12 by getting the school involved with the Stay in the Game Network. He also coordinated the realignment of the master schedule to meet the needs of all students in taking the courses they need and want. He facilitated his school building joining an Adolescent Literacy Network through high local ESC and participates in a city government and school initiative to align community employment needs with programs and skills offered to students through the schools.

Lillian Tolbert

Lillian Tolbert is an elementary school teacher at the Superior School for the Performing Arts. She has her M.A. in Instructional Technology. She actively participates in her building and district's leadership teams, serves as the Lead Teacher in her district, and is the President of her local teachers association. Lillian was awarded the Instructional Excellence Award by her district in 2022 and was a finalist for the Ohio Masters Teachers Award (2022) and Ohio George B. Milbourne Team Teaching Award (2023), both of which are recognized by the Martha Holdens Jennings Foundation.

As an educator, Lillian works at a trailblazing school, where she is helping her students make great strides by implementing the arts into the core curriculum. Throughout her career, Lillian has garnered success in meeting and succeeding value added measures in English Language Arts. Currently, she implements restorative practices and morning circles daily in her classroom to help her students begin their day on a positive note and prepare for learning. For this work, Lillian was featured on CNN's United Shades of America with W. Kamau Bell in recognition for work with restorative practices. She is an alumnus of the district she currently works in and is passionate about giving back to her community.

India Ford

India R. Ford Ed.D. is the Superintendent of T-Squared Honors Academy, an independent charter school. She has her bachelor's in education, master's in administration, and a Doctorate in Urban Education. Through her career, Dr. Ford has served in a variety of roles, including Teacher, Professor, Consultant, Educational Coach, and developer/founder of a Community School.

Through her experience as an educator in a variety of settings, Dr. Ford understands that school culture is critical to program success. Dr. Ford has designed her program with a strong culture that includes parental accountability, which fosters an important partnership between the school, the family, and the student. Through her diligent attention to building culture in her school, Dr. Ford has decreased the number of physical altercations by 90% and increased on-task time in classrooms through meetings

with families to ensure they understand the program’s rules and expectations. Additionally, to further minimize distractions, Dr. Ford acquired Yondr pouches to lock up phones, minimizing incidents of drama, fights, and classroom distractions these devices can caused. Through these efforts, teachers are able to focus on instructing, and students on learning, which leads to better morale for educators and greater achievement for students.

Marie Mitchell

Marie Mitchell is a teacher at John Marshall High School – School of Engineering. She has her MA, and a Comprehensive Social Studies grades 7-12 and Intervention Specialist K-12 license. Prior to teaching, Marie served as a parent liaison. She is also the Chapter Chairperson of her school. Marie is dedicated to serving students from economically disadvantaged backgrounds. In her prior role as a parental liaison, Marie worked to understand the needs of parents and families and help them access necessary resources and supports. As a teacher, Marie created a program to help students with passage of the state tests. For many students, this was a last-chance opportunity, so she organized the program and onboarded teacher volunteers to support this effort. Additionally, for most of her teaching career, her student’s scores on the American Government Ohio State Test (OST) have been well above her district’s average.

Appendix G. Calculations for Options 1 and 2

Exhibit G.1. Calculation of Recommended FY24 Adequate Funding for Students Who Are Economically Disadvantaged as Supplement to Current DPIA Funding

Calculation steps	Calculation
A. Adequate FY23 Base Per-Pupil Cost (from Exhibit 6.8 in Chapter 6)	\$12,164
B. Adequate FY23 Per-Pupil Cost for Economically Disadvantaged Pupils (from Exhibit 6.8 in Chapter 6)	\$6,193
C. Expected FY23 Base Per-Pupil Spending (from Exhibit 6.8 in Chapter 6)	\$12,543
D. Expected FY23 Per-Pupil Spending on Economically Disadvantaged Pupils (from Exhibit 6.8 in Chapter 6)	\$2,619
E. FY23 Per-Pupil Adequacy Funding Gap = (Adequate FY23 Base Per-Pupil Cost + Adequate FY23 Per-Pupil Cost for Economically Disadvantaged Pupils) – (FY24 Ohio Statewide Average Base Per-Pupil Funding Amount + Expected FY23 Per-Pupil Spending on Economically Disadvantaged Pupils) [[A + B] – (C + D)]	\$3,195
F. Inflation Rate from FY23 to FY24	3.1
G. Recommended Supplemental DPIA Funding FY24 Per-Pupil Adequacy Funding Gap = FY23 Per-Pupil Funding Gap x (1 + Inflation Rate) [E x (1 + F / 100)]	\$3,294

Source. Research team analysis of adequate cost and actual spending for students who are economically disadvantaged (Chapter 6), DPIA funding formula (ODEW, 2024).

Exhibit G.2. Calculation of Recommended FY24 Adequate Funding Weight for Students Who Are Economically Disadvantaged as Replacement for Current DPIA Funding

Calculation steps	Calculation
A. Adequate FY23 Base Per-Pupil Cost (from Exhibit 6.8 in Chapter 6)	\$12,164
B. Adequate FY23 Per-Pupil Cost for Economically Disadvantaged Pupils (from Exhibit 6.8 in Chapter 6)	\$6,193
C. Expected FY23 Base Per-Pupil Spending (from Exhibit 6.8 in Chapter 6)	\$12,543
D. Expected FY23 Per-Pupil Spending on Economically Disadvantaged Pupils (from Exhibit 6.8 in Chapter 6)	\$2,619
E. FY23 Per-Pupil Adequacy Funding Gap = (Adequate FY23 Base Per-Pupil Cost + Adequate FY23 Per-Pupil Cost for Economically Disadvantaged Pupils) – (FY24 Ohio Statewide Average Base Per-Pupil Funding Amount + Expected FY23 Per-Pupil Spending on Economically Disadvantaged Pupils) $[(A + B) - (C + D)]$	\$3,195
F. Actual FY23 Per-Pupil Spending on Economically Disadvantaged Pupils from DPIA Funding (from Exhibit 6.10 in Chapter 6)	\$621
G. FY23 Per-Pupil Adequacy Funding Gap When Replacing DPIA = FY23 Per-Pupil Adequacy Funding Gap + Actual FY23 Per-Pupil Spending on Economically Disadvantaged Pupils from DPIA Funding $[E+F]$	\$3,816
H. Inflation Rate from FY23 to FY24	3.1
I. FY24 Per-Pupil Adequacy Funding Gap When Replacing DPIA = FY23 Per-Pupil Adequacy Funding Gap When Replacing DPIA x (1 + Inflation Rate / 100) $[G \times (1 + H / 100)]$	\$3,934
J. FY24 Ohio Statewide Average Base Per-Pupil Funding Amount (from ODEW, 2024)	\$8,242
K. Recommended FY24 Funding Weight for Economically Disadvantaged Pupils = FY24 Per-Pupil Adequacy Funding Gap When Replacing DPIA / FY24 Ohio Statewide Average Base Per-Pupil Funding Amount $[I / J]$	0.4773

Source. Research team analysis of adequate cost and actual spending for students who are economically disadvantaged (Chapter 6), DPIA funding formula (ODEW, 2024).

About the American Institutes for Research®

Established in 1946, the American Institutes for Research® (AIR®) is a nonpartisan, not-for-profit institution that conducts behavioral and social science research and delivers technical assistance both domestically and internationally in the areas of education, health, and the workforce. AIR's work is driven by its mission to generate and use rigorous evidence that contributes to a better, more equitable world. With headquarters in Arlington, Virginia, AIR has offices across the U.S. and abroad. For more information, visit [AIR.ORG](https://www.air.org).



AIR® Headquarters

1400 Crystal Drive, 10th Floor
Arlington, VA 22202-3289
+1.202.403.5000 | [AIR.ORG](https://www.air.org)

Notice of Trademark: "American Institutes for Research" and "AIR" are registered trademarks. All other brand, product, or company names are trademarks or registered trademarks of their respective owners.

Copyright © 2025 American Institutes for Research®. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, website display, or other electronic or mechanical methods, without the prior written permission of the American Institutes for Research. For permission requests, please use the Contact Us form on [AIR.ORG](https://www.air.org).