



Effectiveness And Efficiency Of Kentucky School Districts

Presentation to the
Education Assessment and Accountability Review Subcommittee by the
Office of Education Accountability
October 18, 2023

Overall Findings: Spending And Outcomes

- Kentucky spends slightly less per pupil than the nation and has slightly lower reading and mathematics achievement than the nation
- Kentucky district spending and outcomes analysis shows:
 - Higher-spending districts, on average, have higher-need populations and lower outcomes
 - When student demographics are considered, outcomes vary little by district spending
 - Outcomes among similarly spending districts vary considerably

Overall Findings: Factors Associated With Effectiveness

- Effectiveness of Kentucky school districts is associated with:
 - Favorable teacher working conditions
 - Lower teacher turnover
- Small districts face challenges related to efficiencies of scale that are outside of administrators' control. These challenges may negatively affect student achievement in some districts.

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Presentation Outline

- **Background**
 - Findings from previous research
 - Study questions, methods, and data
- Kentucky And US
- District Per-Pupil Expenditures
- Relationship Between District Spending And Outcomes
- District Characteristics Associated With Effectiveness
- Conclusion

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Consensus Findings From National Research

- The relationship between spending and outcomes is complicated, not entirely understood, and often not observable in the short term.
- Personnel, salaries and benefits are the majority of expenditures in all districts and are an important focus of analysis.
- Some districts face efficiency-related challenges that are outside administrators' control.
 - Higher-need student populations
 - District size
 - Geographic dispersion
 - Higher-cost labor markets

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Comparing Outcomes And Spending Is Not Straightforward

DISTRICT A

- 60% average proficiency
- \$12,000 per-pupil spending
- 10% of students economically disadvantaged
- 80% of adults have college degrees

DISTRICT B

- 45% average proficiency
- \$14,000 per-pupil spending
- 80% of students economically disadvantaged
- 10% of adults have college degrees

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Study Questions For Kentucky District Analysis

- Which factors explain spending differences among Kentucky districts?
- What is the relationship between district spending and outcomes, once student and community demographic characteristics are taken into account?
- What characteristics are associated with effective districts?

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Methods: Per-Pupil Spending And Outcomes

- The report compares district per-pupil spending and reading and mathematics outcomes in 2018, 2019, and 2022
- Districts considered effective in reading and mathematics based on “impact”
 - Reading and mathematics scores of district students compared with demographically similar students across the state.
- Staff used available district-level data to look for differences among relatively more effective, “higher-impact,” districts and less effective, “lower-impact,” districts

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Data Used For The Report

- Kentucky Department of Education (KDE) student-level data
 - Reading and mathematics, graduation, career readiness
 - Student demographic data and program eligibility
- KDE District-level Data
 - Per-pupil spending (current) overall and by spending category
 - Personnel data: certified and classified staff, teacher salaries, pupil/teacher ratios
 - Teacher working conditions survey, 2020
- Additional Sources
 - National Center for Education Statistics (NCES)
 - Kentucky Center for Statistics
 - American Community Survey

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District-Level Data

- The report identifies efficiency challenges affecting Kentucky districts that are beyond administrators' control*
- Findings of the report may be used as a lens on current district performance and efficiency challenges. Sources of current data include:
 - KDE school report card
 - KDE teacher working conditions survey, 2022
 - OEA District Data Profiles
- Impact scores for individual districts are not reported.

*These are reported for individual districts in Appendix I based on 2018, 2019, and 2022 data.

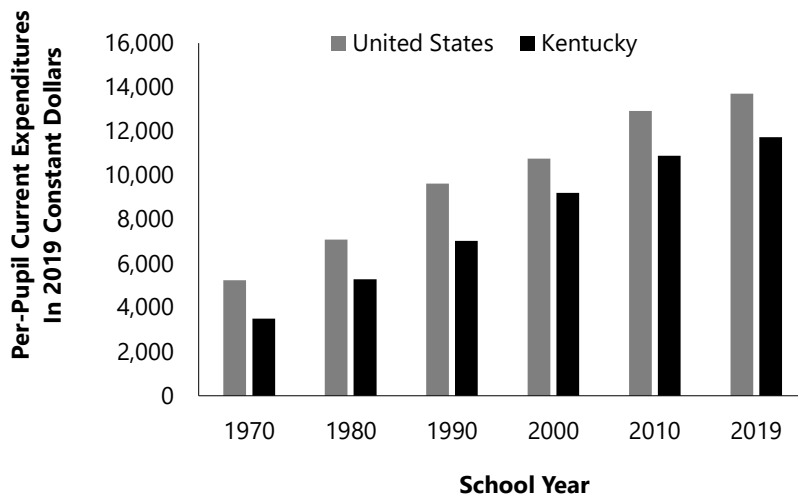
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Presentation Outline

- Background
- **Kentucky And US**
 - Kentucky's spending and reading and mathematics achievement compared with the nation
- District Per-Pupil Expenditures
- Relationship Between District Spending And Outcomes
- District Characteristics Associated With Effectiveness

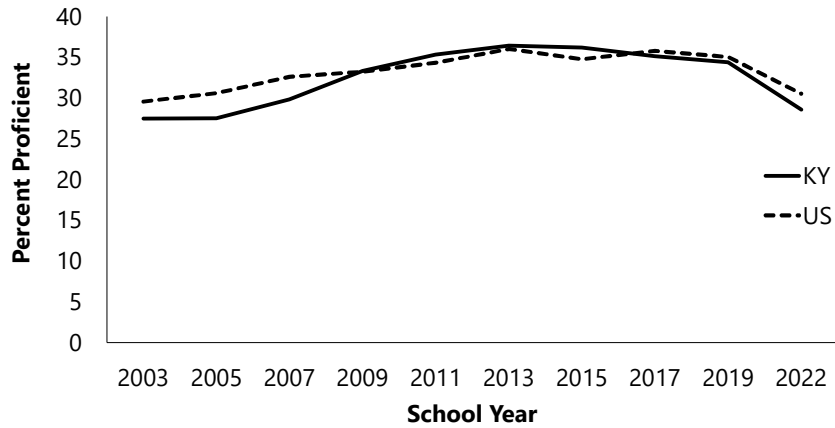
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Per-Pupil Current Expenditures Kentucky And United States (US) In 2019 Constant Dollars, 1970-2019



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Average Percentage Of Students Proficient Or Above NAEP 4th And 8th Grade Reading And Mathematics 2003 To 2022



Note: Appendix D shows individual grades and subjects for as early as 1990.

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Per-Pupil Current Expenditures And COLA-Adjusted Per-Pupil Expenditures 2020 Kentucky And US

	COLA-Adjusted Current Expenditures	COLA-Adjusted Instructional Expenditures
Kentucky	\$12,700	\$7,424
US	13,489	\$8,158
Difference Kentucky and US	-789	-734
Kentucky as a percent of US	94%	91%*

*The full report shows that, like other more rural and remote states, Kentucky spends a relatively greater amount on transportation and food and relatively less on instruction than does the nation.

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Presentation Outline

- Background
- Kentucky And US
- **District Per-Pupil Expenditures**
 - Efficiency challenges beyond administrators' control
 - Range in per-pupil spending 2018, 2019, and 2022
- Relationship Between District Spending And Outcomes
- District Characteristics Associated With Effectiveness
- Conclusion

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Efficiency Challenges And Associated Revenue Sources

Efficiency Challenge	Dedicated Funding	Revenue Sources
Higher-need populations <ul style="list-style-type: none"> • FRPL-eligible* • Special Education • Limited English Proficiency 	Yes	Federal; SEEK-add-on weights (Greatest for special education; In 2022, totaled about \$464 million or 13% of SEEK revenue)
Small size of 1,000 student membership or less** 28 of Kentucky's 39 small districts are independent school districts (ISDs)	No	ISDs, on average, have higher local tax rates than county districts

* FRPL = federal free or reduced-priced lunch.

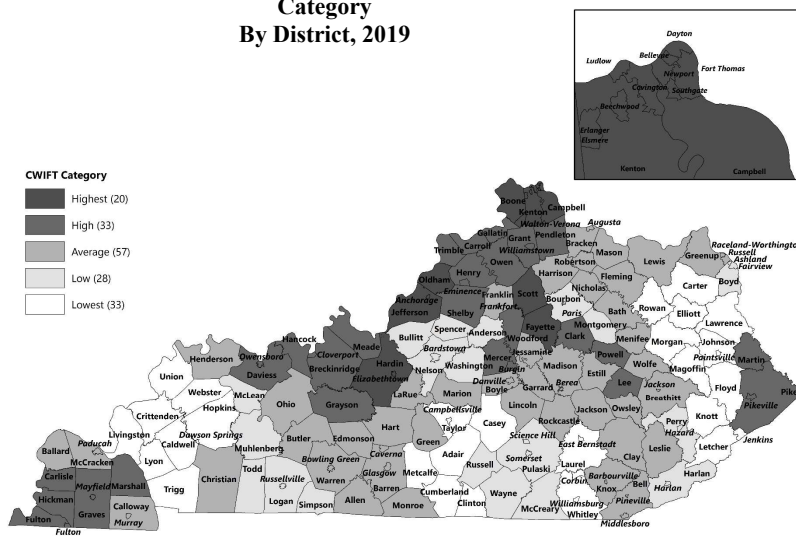
**This threshold used by OEA for this report. Many Kentucky districts that exceed 1,000 students may be considered small by national standards.

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Efficiency Challenges And Associated Revenue Sources

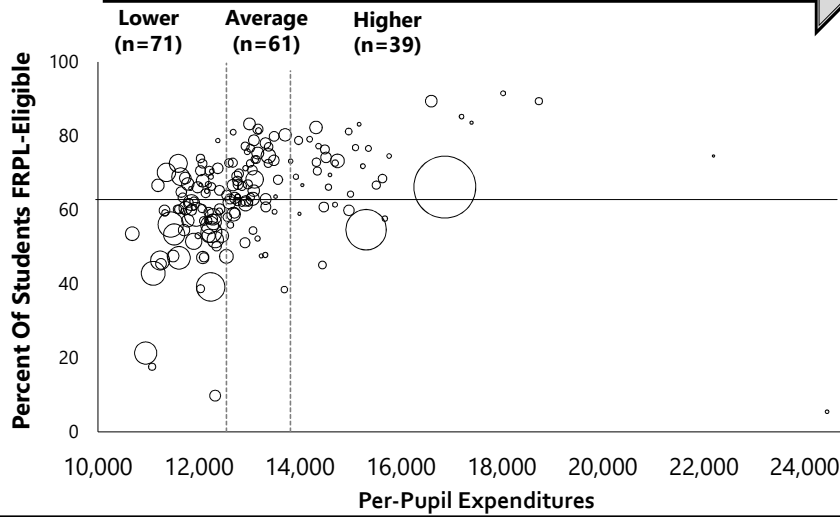
Efficiency Challenge	Dedicated Funding	Revenue Sources
Geographic dispersion	Yes	District square miles included in SEEK transportation calculation
Higher-cost labor markets	No	Varies considerably; districts in higher-cost labor markets are disproportionately among the highest- and lowest-spending districts

Comparable Wage Index For Teachers Category By District, 2019



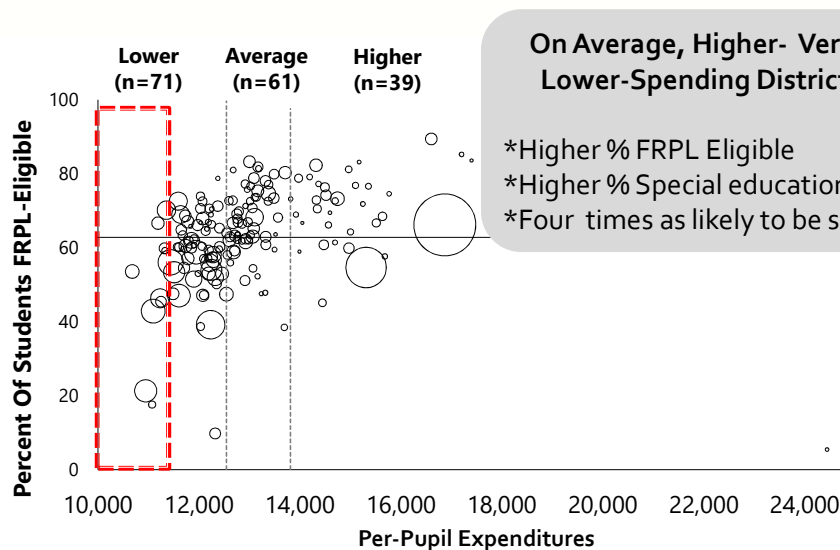
Average Per-Pupil Expenditures, Percent Of Students FRPL-Eligible, And Student Membership By District, 2018, 2019, And 2022

Generally, efficiency challenges increase with district spending.



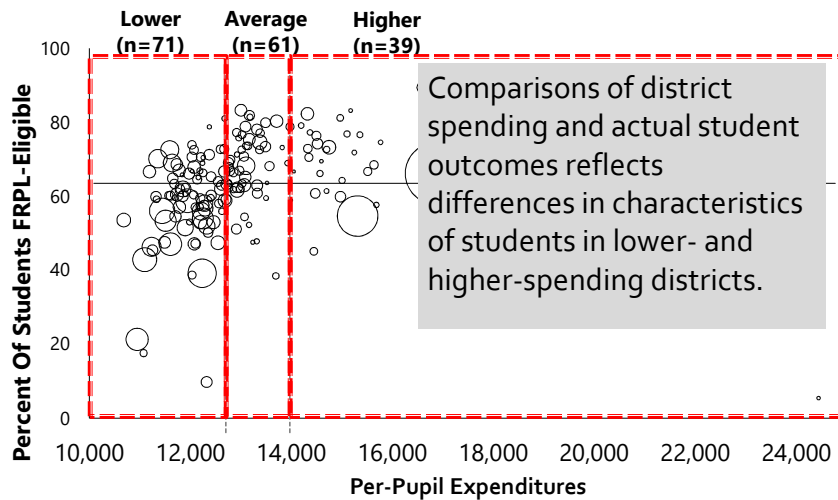
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Average Per-Pupil Expenditures, Percent Of Students FRPL-Eligible, And Student Membership By District, 2018, 2019, And 2022



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The Relationship Between Spending And Actual Outcomes In Lower- And Higher-Spending Districts Reflects Demographic Characteristics of Those Districts



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Presentation Outline

- Background
- Kentucky And US
- District Per-Pupil Expenditures
- **Relationship Between District Spending And Outcomes**
 - Spending and actual performance
 - Demographic characteristics and district “impact”
 - Spending and district impact
- District Characteristics Associated With Effectiveness
- Conclusion

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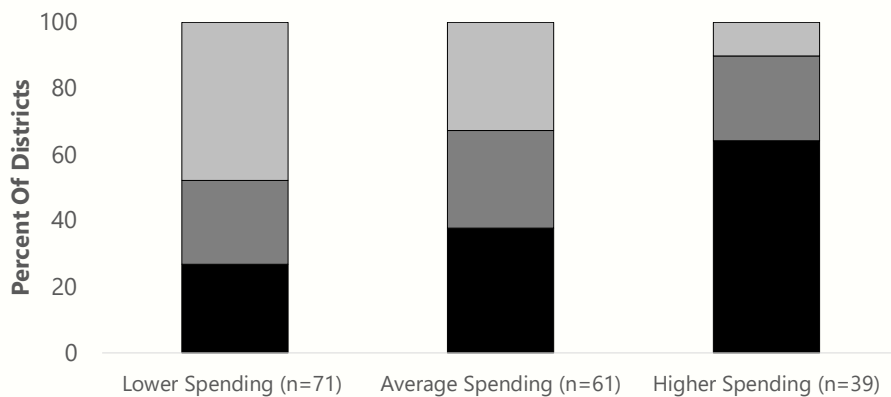
Summary Of Spending And Outcomes Actual Versus Impact

- The relationship between district spending and actual outcomes is negative
 - As spending increases, outcomes decrease
 - Reflects higher-need populations in higher-spending districts
- Outcomes vary little by district-spending, on average, once student and community demographic characteristics are considered—district “impact”
 - Higher-spending districts remain relatively lower
- Student outcomes among similarly spending districts vary considerably
 - True for actual outcomes and district impact

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Actual District Reading And Mathematics Performance And Per-Pupil Spending

■ Lower Actual Performance ■ Average Actual Performance ■ Higher Actual Performance



Note: Data in this slide combine data shown in Figure 3.1 of the report.²⁴

Actual Versus “Impact”

DISTRICT A

- 60% average proficiency

How do District A students compare with demographically similar students?

- \$12,000 per pupil spending
- 10% of students economically disadvantaged
- 80% of adults have college degrees

DISTRICT B

- 45% average proficiency

How do District B students compare with demographically similar students?

- \$14,000 per pupil spending
- 80% of students economically disadvantaged
- 10% of adults have college degrees

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Methodology “Impact” Model

DISTRICT A
ACTUAL SCORE

PREDICTED SCORE

DISTRICT B
ACTUAL SCORE

PREDICTED SCORE

IMPACT

IMPACT

Student

Economic disadvantage, special education, limited English proficiency, race, gender, moved during school year

School And Community

Higher-poverty school (75% or more FRPL-eligible)

Percent of adults bachelor’s degree or more

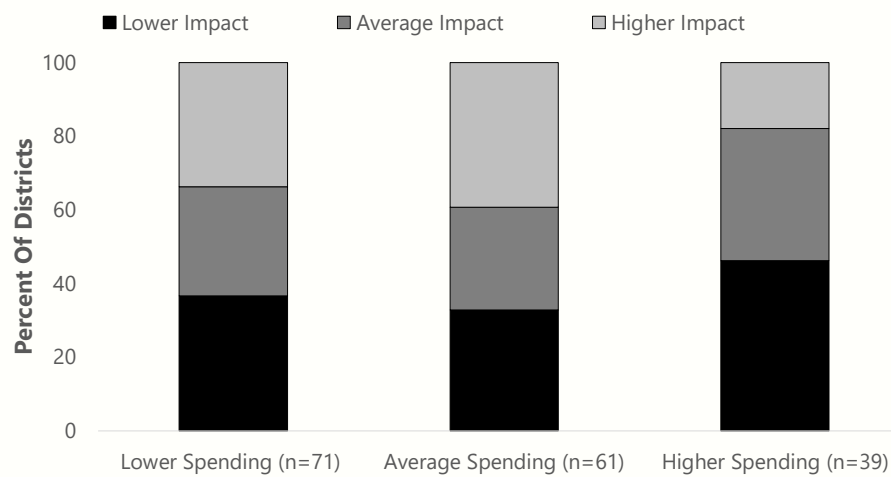
Appendix A of the report explains statistical methods used in the impact model.²⁶

Higher- And Lower-Impact Districts

- Higher-Impact Districts
 - Districts in which students score far above demographically similar students
 - Most higher-impact districts have relatively high actual scores
- Lower-Impact Districts
 - Districts in which students score far below demographically similar students
 - Most lower-impact districts have lower actual performance

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District Impact In Reading And Mathematics And Per-Pupil Spending



Note: Data in this slide combine data shown in Figure 3.2 of the report.²⁸

Presentation Outline

- Background
- Kentucky And US
- District Per-Pupil Expenditures
- Relationship Between District Spending And Outcomes

- **District Characteristics Associated With Effectiveness**
 - Working conditions
 - Teacher turnover
 - Small district size

- Conclusion

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KDE Teacher Working Conditions Survey

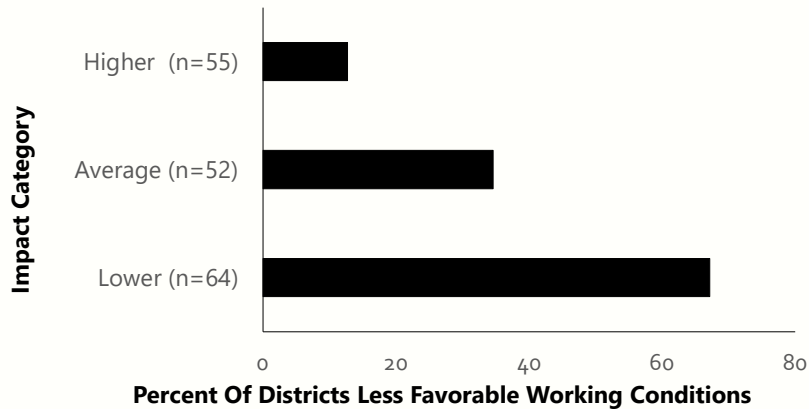
- KDE administers every two years to all certified educators.

- OEA grouped districts by average responses on all question categories for survey administered in 2020.

- Districts in lowest 40% identified as “relatively less favorable” working conditions.

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Districts With Relatively Less Favorable Working Conditions By Impact Category



*Note: relatively less favorable are districts in lowest two quartiles (lowest forty percent) of districts. Data based on 2020 KDE working conditions survey.

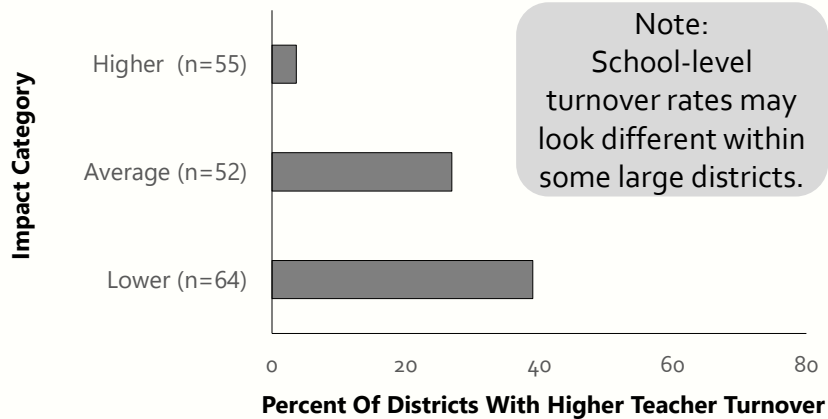
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Local Leaders Can Influence Teacher Working Conditions

- Question categories distinguishing higher- and lower-impact districts
 - School climate
 - Positive attitude of colleagues
 - Feedback and coaching
 - Thoroughness of feedback on all aspects of teaching
 - School leadership
 - Positive influence of school leader on teaching
- Local leaders can influence these conditions
 - Expectations, training, and support of principals
 - Instructional supports for teachers
 - Additional resources that support working conditions

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Higher Teacher Turnover By District Impact Category



OEA considered districts with teacher turnover rates of 15 percent or greater to have higher turnover.

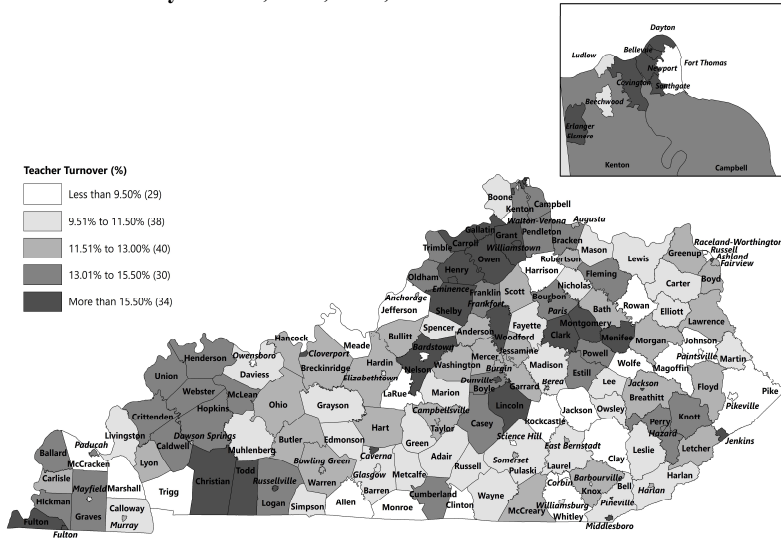
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Working Conditions And Teacher Turnover

- None of the districts with highest working conditions survey scores have higher teacher turnover
- Teacher turnover also operates independently from working conditions in some districts
 - Some have relatively less favorable working conditions and lower turnover
 - Some have higher turnover but not less favorable working conditions

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Percent Teacher Turnover By District, 2018, 2019, And 2022



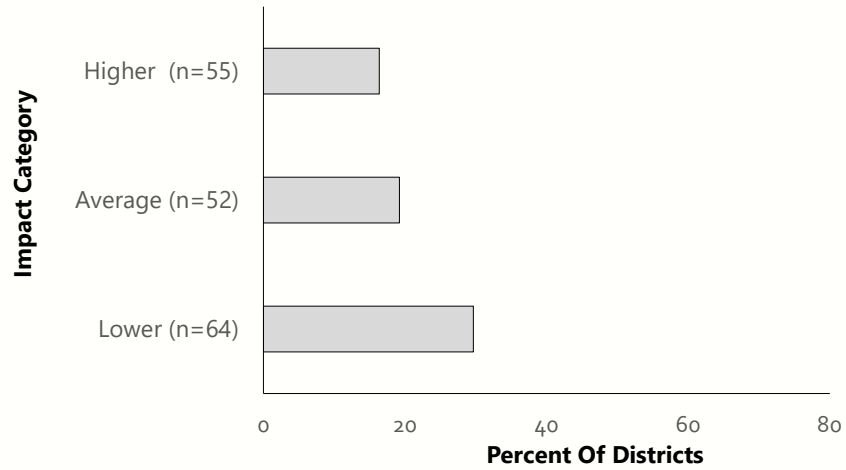
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Teacher Turnover And Higher-Cost Labor Markets

- At the district level, teacher turnover greater among districts in higher-cost labor markets
- In higher-cost labor markets, teacher salary and teacher turnover are associated
 - Teacher turnover greater in districts with relatively less competitive salary
- Appendix I shows district labor market and teacher starting salary relative to other districts in labor market

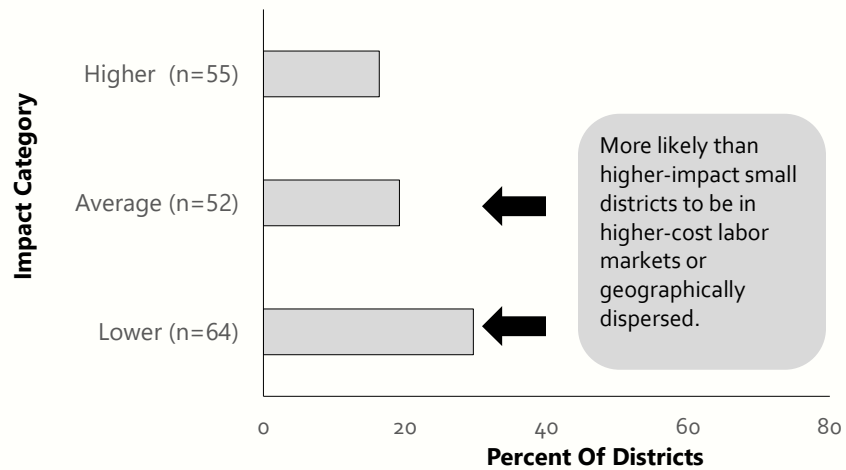
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Percent Districts That Are Small By Impact Category



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Percent Of Districts By Reading And Mathematics Impact Category That Are Small 2018, 2019, And 2022



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Small Districts

Challenges

- Higher overhead costs leave less funds available for instruction
 - Lower percentage of total spending on instruction in Kentucky small versus other districts

Spending

- Smaller are disproportionately in higher per-pupil spending categories
- Costs in small districts that are ISDs supported in part by higher local tax rates
- 10 of 18 lower-impact, higher-spending districts are small; 9 of the 10 are ISDs

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Considerations For Small Districts

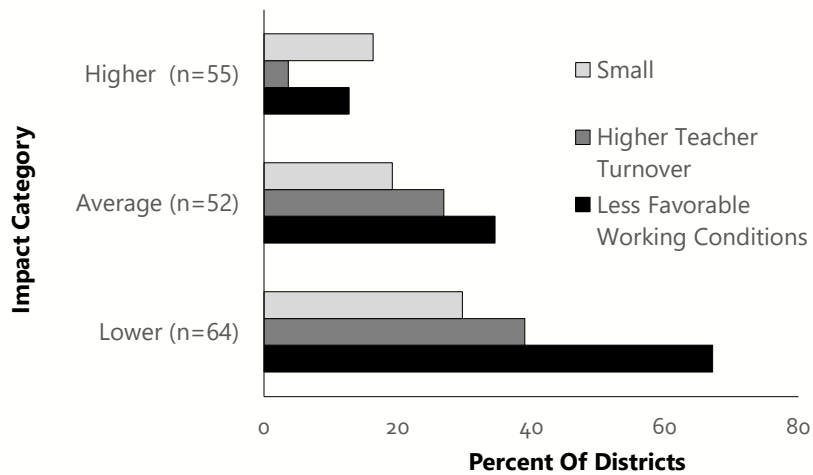
- Small districts that are ISDs have the option to request merger with the county in which the ISD is located*
- Small county districts do not currently have the option to merge
- Some states provide additional funding for small districts**

*See OEA ISD study referenced in report.

** See OEA SEEK study referenced in report.

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District Characteristics By Impact Category



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Conclusions: Spending And Outcomes

- The relationship between spending and actual outcomes reflect demographic differences among lower- and higher-spending districts
- Once student demographics are taken into account, district effectiveness varies little by spending level
 - Higher-spending districts still relatively lower
- Student outcomes among similarly-spending districts vary considerably

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Conclusions: District Effectiveness And Efficiency

Data in this report highlight three areas that merit attention from state and local leaders concerned about district effectiveness and efficiency:

- Teacher working conditions
- Teacher turnover
- Efficiency challenges of small districts

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Addressing These Challenges Requires Collective Efforts

Teacher Working Conditions And Turnover

- Local boards and leaders can influence:
 - Competitive salaries
 - Leadership development
 - Resources that support teacher working conditions
- General Assembly may also consider whether SEEK funding allows districts to keep pace with labor market demands

Small Districts

- ISD communities have the option to merge
- General Assembly may consider small district funding weights

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End

Questions?

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