# Illinois Education Research Council

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# Examining the Distribution of Teacher Quality in Illinois

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September 19, 2006
Chicago, Illinois

# What the research tells us about teacher quality and student outcomes

- **Selectivity of teacher's baccalaureate college**
  - *-proxy for teacher's academic performance*
- **Years of teaching experience**
- **Teacher test scores**
  - *particularly for at-risk students*
- **Advanced subject-specific degrees**
  - *evidence limited to high school math and science*
- **Subject-specific teacher certification**
  - *evidence strongest for high school math*

***We owe particular thanks to Lankford, Loeb and Wyckoff (2002) for their study of New York, which inspired us to do this study of Illinois.***

# Creating the Teacher Quality Index (TQI)

*Note that weights are generated by Principal Components Analysis*

| School Level Teacher Characteristics | Weight |
|---|---|
| Teachers' Average ACT Composite Scores | 0.861 |
| Teachers' Average ACT English Scores | 0.859 |
| % of Teachers Failing Basic Skills Test on First Attempt | -0.691 |
| % of Teachers with Emergency/Provisional Certification | -0.577 |
| Teachers' Average College Competitiveness Ranking | 0.520 |
| % of Teachers with 3 or Fewer Years' Experience | -0.044 |

# For Context: NCLB vs TQI

- **NCLB defines a 'Highly Qualified' teacher as one who**
  - **a) Holds a bachelor's degree**
  - **b) Is certified, and**
  - **c) Passed a content examination (In Illinois, for secondary 6-12 certification this is discipline specific, for elementary K-8 it is a single test)**
- **The IERC measures include teachers' own basic academic skills, but lack a measure of out-of-field teaching.**

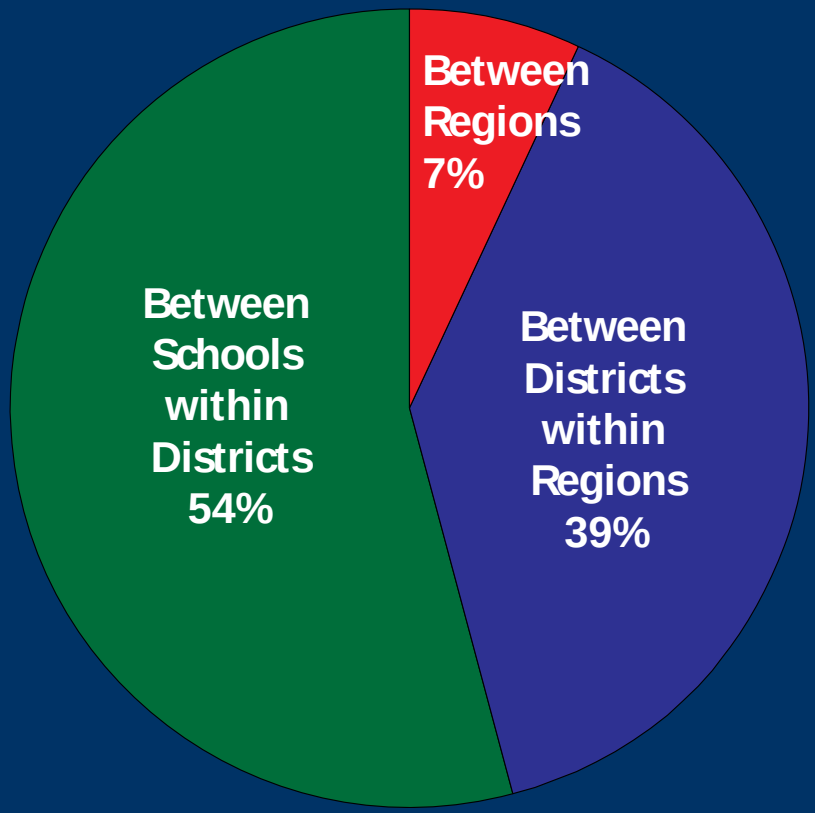
# What the Average Non-CPS School Looks Like, by Statewide TQI Quartile

| TQI Component | Lowest Quartile | | Middle-Low Quartile | Middle-High Quartile | Highest Quartile |
|---|---|---|---|---|---|
| | 0-10% | 11-25% | | | |
| Teachers' average ACT composite score | 18.2 | 19.5 | 20.6 | 21.6 | 23.1 |
| Teachers' average ACT English score | 18.2 | 19.8 | 21.2 | 22.2 | 23.7 |
| % of teachers who failed the Basic Skills Test on first attempt | 16.5% | 5.5% | 2.3% | 1.1% | 0.6% |
| % of teachers with emergency or provisional credentials | 6.9% | 2.0% | 0.9% | 0.6% | 0.3% |
| Teachers' average undergraduate college competitiveness ranking | 2.7 | 2.9 | 3.0 | 3.1 | 3.3 |
| % of teachers with 3 or fewer years of teaching experience | 19.7% | 18.5% | 17.8% | 17.2% | 16.4% |
| *Average TQI* | *-2.1* | *-0.8* | *-0.1* | *0.4* | *1.1* |

# What the Average CPS School Looks Like, by CPS-Specific TQI Quartile

| TQI Component | Lowest Quartile | | Middle-Low Quartile | Middle-High Quartile | Highest Quartile |
|---|---|---|---|---|---|
| | 0-10% | 11-25% | | | |
| Teachers' average ACT composite score | 17.3 | 18.1 | 18.6 | 19.8 | 21.6 |
| Teachers' average ACT English score | 17.5 | 18.3 | 19.1 | 20.2 | 22.2 |
| % of teachers who failed the Basic Skills Test on first attempt | 23.2% | 16.9% | 12.2% | 8.9% | 5.4% |
| % of teachers with emergency or provisional credentials | 18.0% | 11.6% | 8.2% | 6.3% | 4.4% |
| Teachers' average undergraduate college competitiveness ranking | 2.8 | 2.8 | 2.9 | 3.0 | 3.2 |
| % of teachers with 3 or fewer years of teaching experience | 16.6% | 17.7% | 17.0% | 17.6% | 18.4% |
| *Average TQI* | *-3.1* | *-2.3* | *-1.6* | *-1.0* | *0.1* |

# What Contributes to the Variation in TQI?

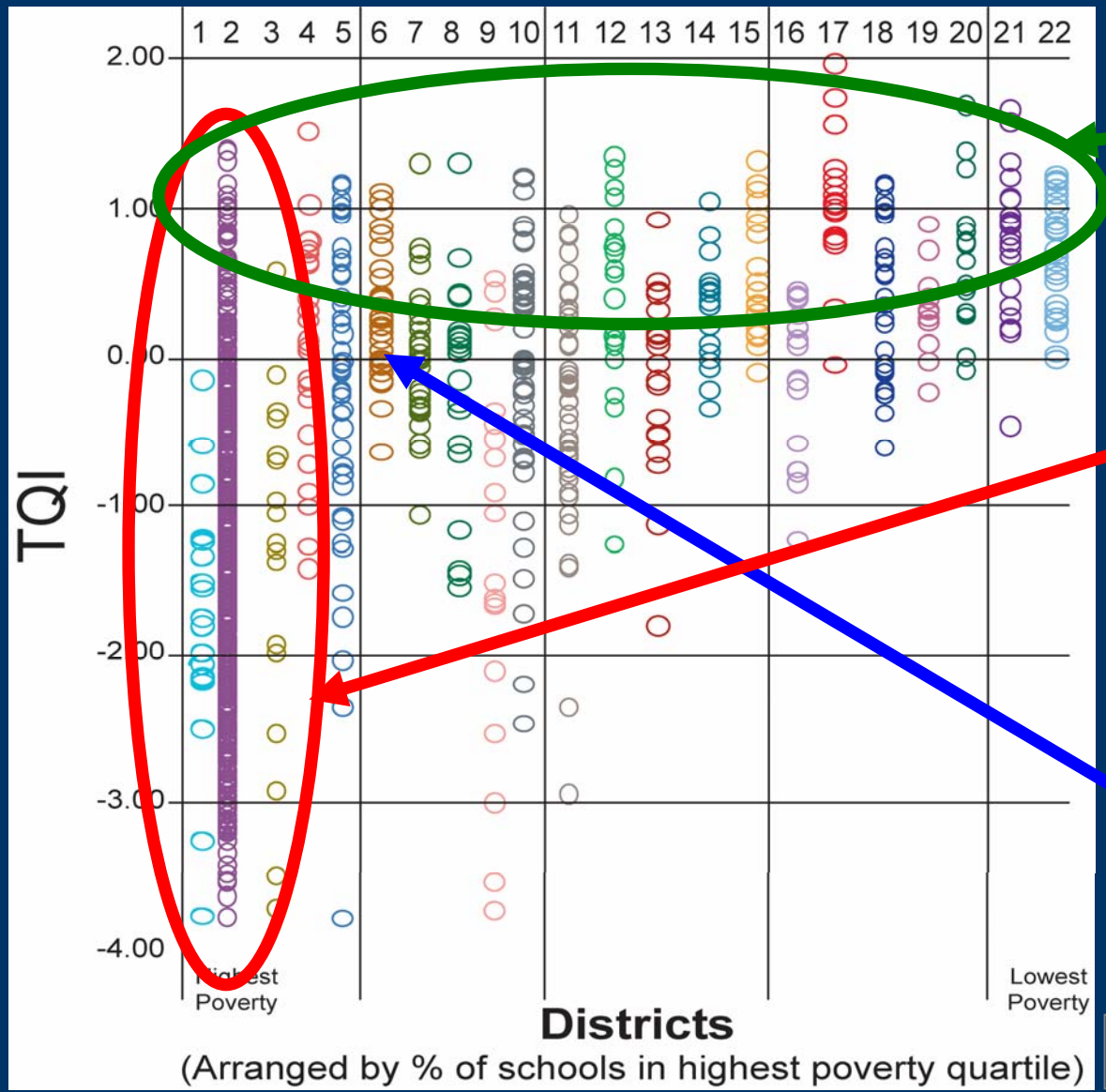



- *Differences between schools within the same district is the biggest contributor to variation in TQI scores*

# It’s not just in our biggest district that we find a wide school TQI distribution

# Within-District School TQI Distribution

**(districts with 10,000+ students, elementary and middle schools only)**

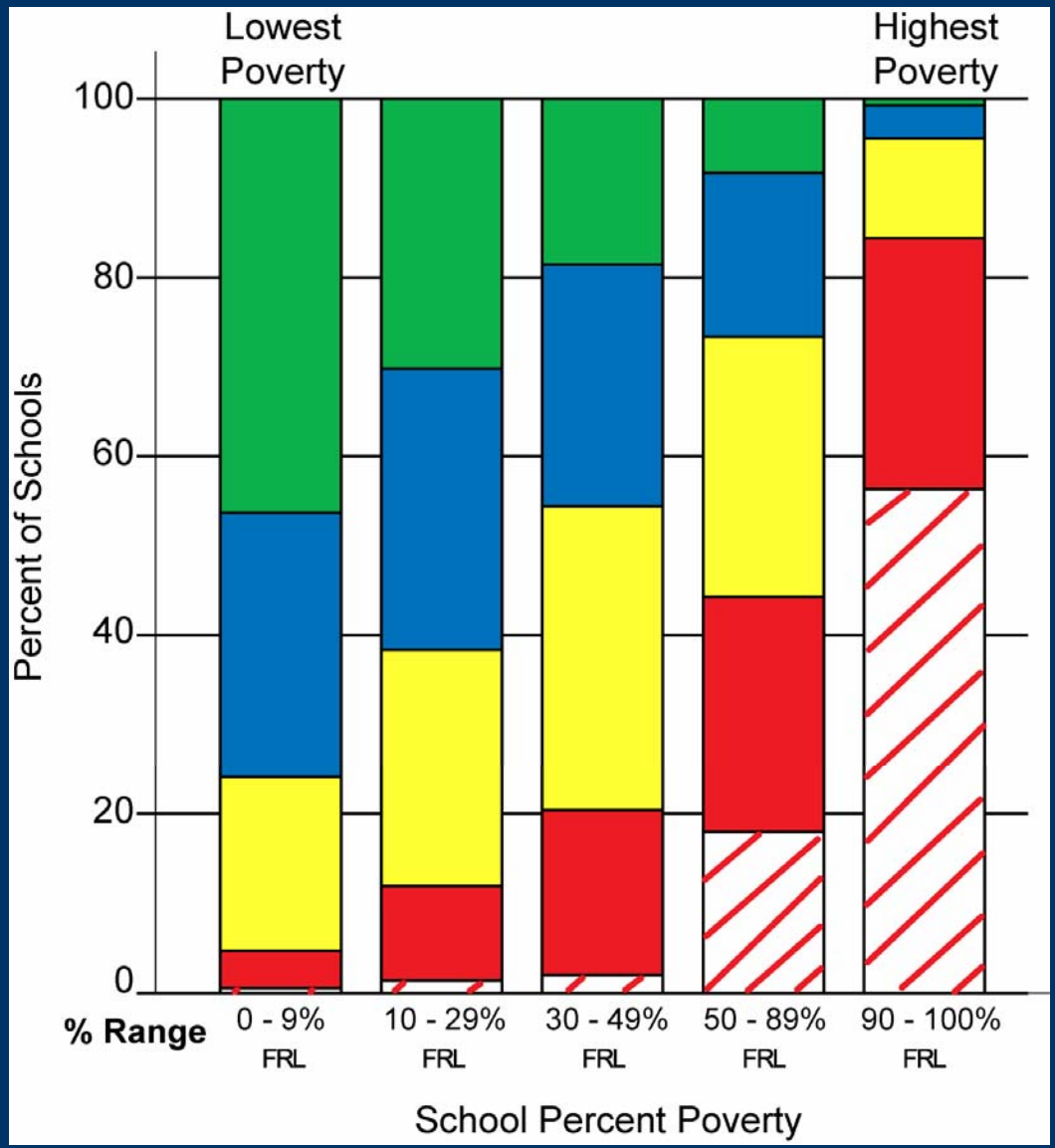



- *There are some above-average TQI schools in almost all large districts.*
- *The "TQI spread" is generally larger in districts with higher concentrations of high-poverty schools –*
- *but some districts buck this trend.*

Four outlier schools in districts 1 and 2 with TQIs lower than 4.00 are not shown on the chart.

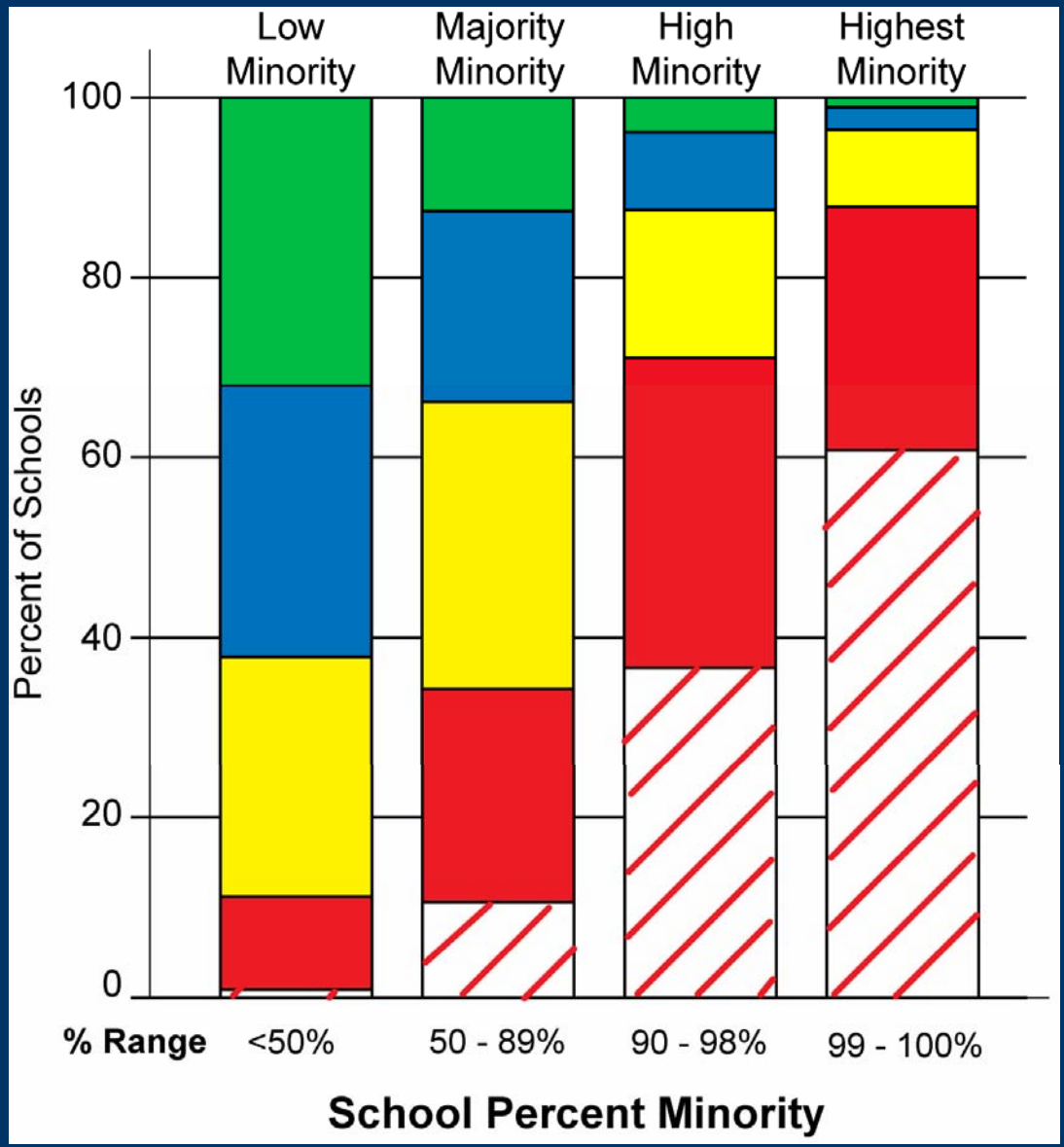
# What does the distribution look like by school percent poverty and percent minority?

# Distribution of School TQI by School Percent Poverty




- *TQI distribution is related to school poverty levels.*
- *The differences continue across all poverty groupings.*

# Distribution of School TQI by School Percent Minority




- ***The higher the school percent minority (especially above 50%) the lower the school TQI.***

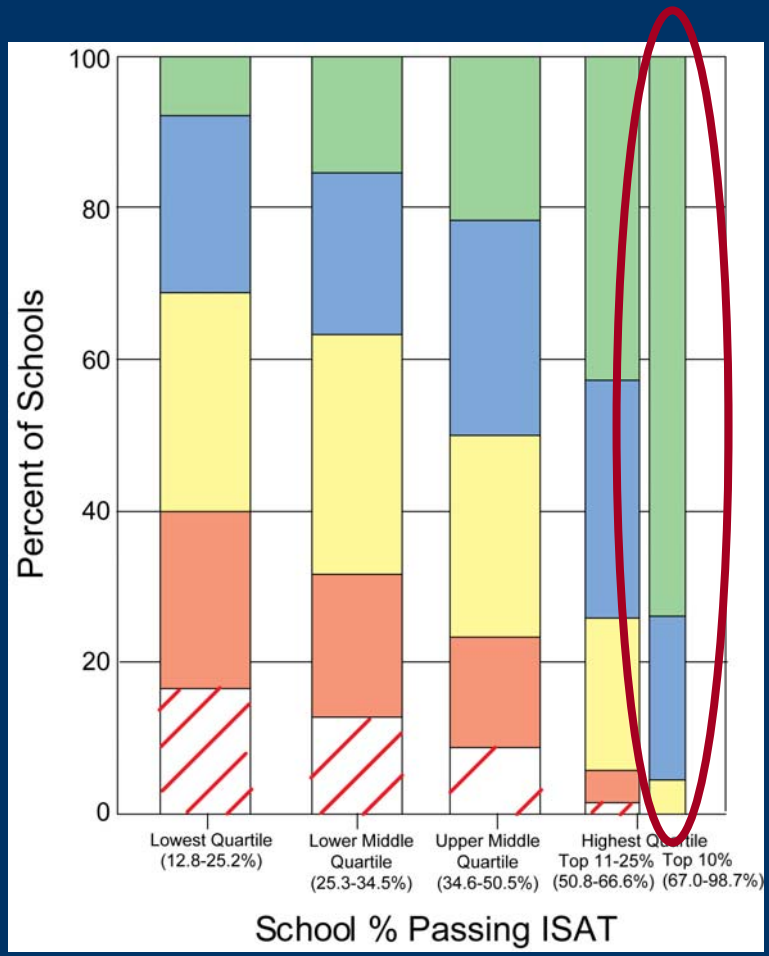
# Statewide School Performance by TQI

**Elementary Schools** **High Schools**

| TQI Quartile | Percent Meeting/Exceeding ISAT Standard | | Percent Meeting/Exceeding PSAE Standard | |
|---|---|---|---|---|
| | Lowest Poverty (<10%) Low Minority (<50%) LL | Highest Poverty (≥ 90%) Highest Minority (≥ 99%) HH | Lowest Poverty (<10%) Low Minority (<50%) LL | Highest Poverty (≥ 50%) Highest Minority (≥ 90%) HH |
| Highest | 84% | – (N=2) | 66% | – (N=1) |
| Middle High | 80% | – (N=2) | 60% | 25% |
| Middle Low | 79% | 37% | 58% | 18% |
| Lowest 11-25% | 78% | 30% | – (N=1) | 10% |
| Lowest 10% | – (N=4) | 30% | – (N=0) | 11% |
| Point change | 6 | 7 | 8 | 14 |
| Percent change | 8% | 23% | 14% | 127% |

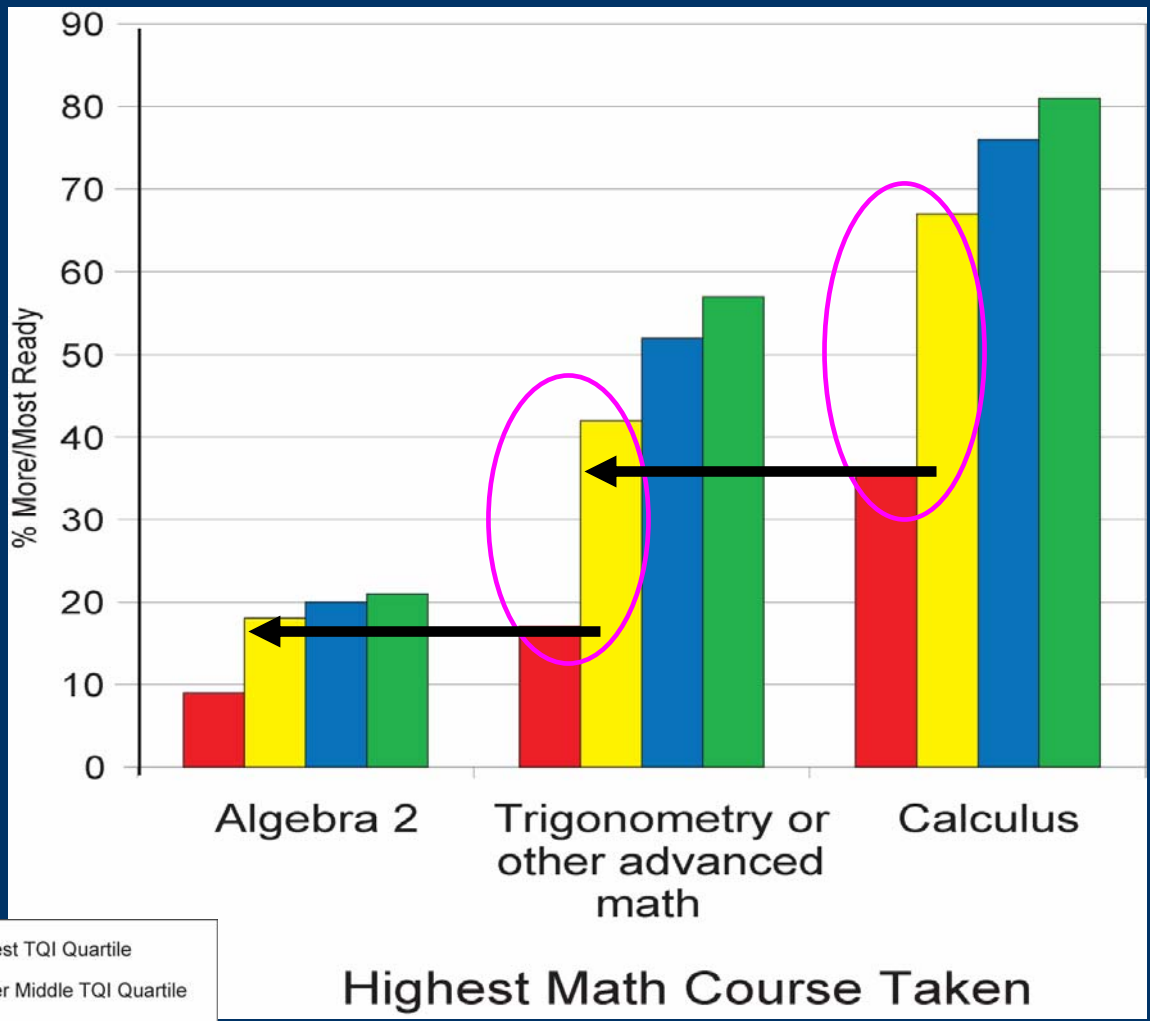
- ***TQI matters most for high-poverty/high-minority high schools.***

# Distribution of CPS-Quartile TQIs among CPS Elementary Schools by CPS School Achievement Quartile




- ***Nearly all top performing CPS schools have TQIs in the top half of the CPS TQI distribution – and most are in the top quartile.***

# TQI, Highest Math Course, and College Readiness




- *College readiness is strongly related to math-taking AND to the school TQI in which the courses are taken.*
- *Taking higher-level math courses in TQI schools beyond the lowest quartile provides a greater readiness boost.*

# Summary of Findings

- TQI is distributed unequally by school percent poverty and percent minority.
- Districts play an important role in teacher distribution.
- Chicago schools have even weaker TQIs.
- TQI matters.
  - It matters more for high-poverty/high minority schools,
  - And especially for high schools.


# Contact us at:

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