MLDS CENTER
Maryland Longitudinal Data System

Better Data • Informed Choices • Improved Results

https://mldscenter.maryland.gov

The Role of Concentrated Poverty and Race in Long-Term Academic Outcomes

Commission on Innovation and Excellence in Education

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Introductions and Acknowledgements

- About the presenters:
  - ***Angela K. Henneberger***, Ph.D., is director of the Research Branch at the MLDS Center and Research Assistant Professor at the University of Maryland School of Social Work (SSW).
  - ***Bess A. Rose***, Ed.D., is a member of the Research Branch at the MLDS Center and statistician at the SSW.
- Acknowledgements:
  - Thanks to the MLDSC Research Team and Research and Policy Advisory Board, participants at the MLDS Research Series and MD Connections Summit, and MSDE staff for helpful input.
  - Thanks to Dr. Dawnsha Mushonga (SSW), Dr. Laura Stapleton, Yi Feng, and Tessa Johnson (University of Maryland, College Park) for expert consulting on statistical questions, and Alison Preston (SSW) for assistance with literature reviews.

Overview

- What is the MLDS Center?

- The problem

- Schools matter

- How does the MLDS Center measure poverty?

- Results from Maryland's data

- Summary, next steps and Q & A

What is the MLDS Center?
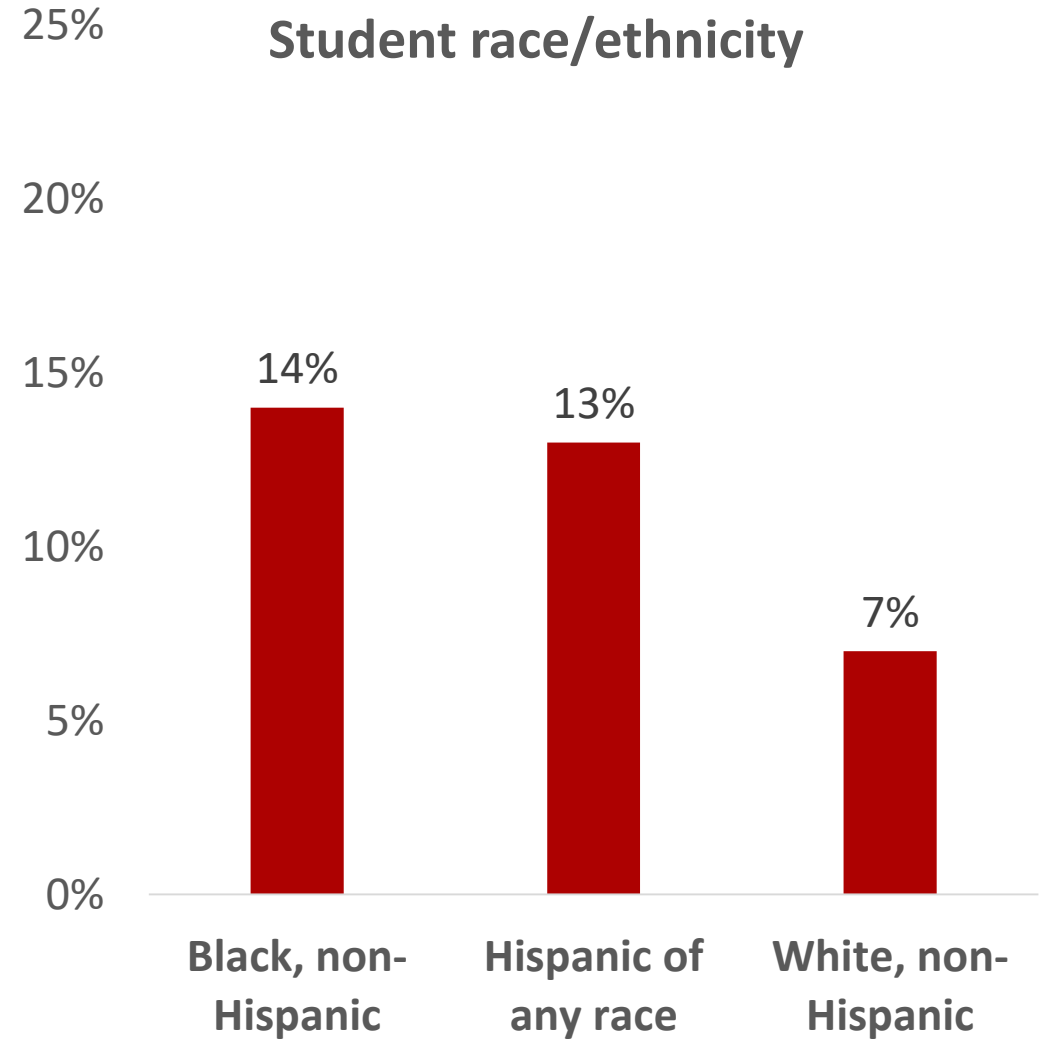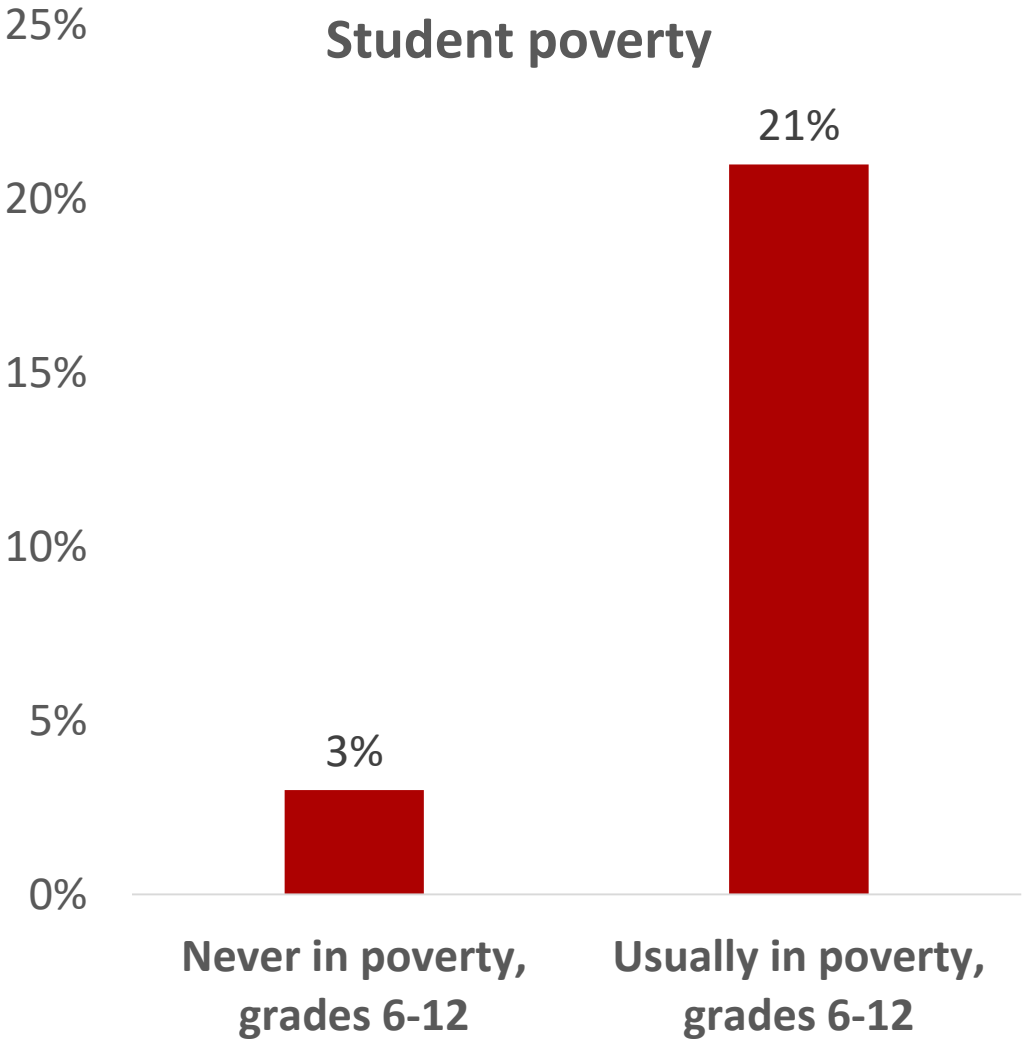
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What is the MLDS Center?

- The Maryland Longitudinal Data System (MLDS) has been an independent unit of state government since 2013

- In partnership with the University of Maryland we conduct advanced statistical analyses and policy evaluation to provide actionable information for policy and practice

- We link statewide K12, postsecondary, and workforce data received from MSDE, MHEC, and DLLR
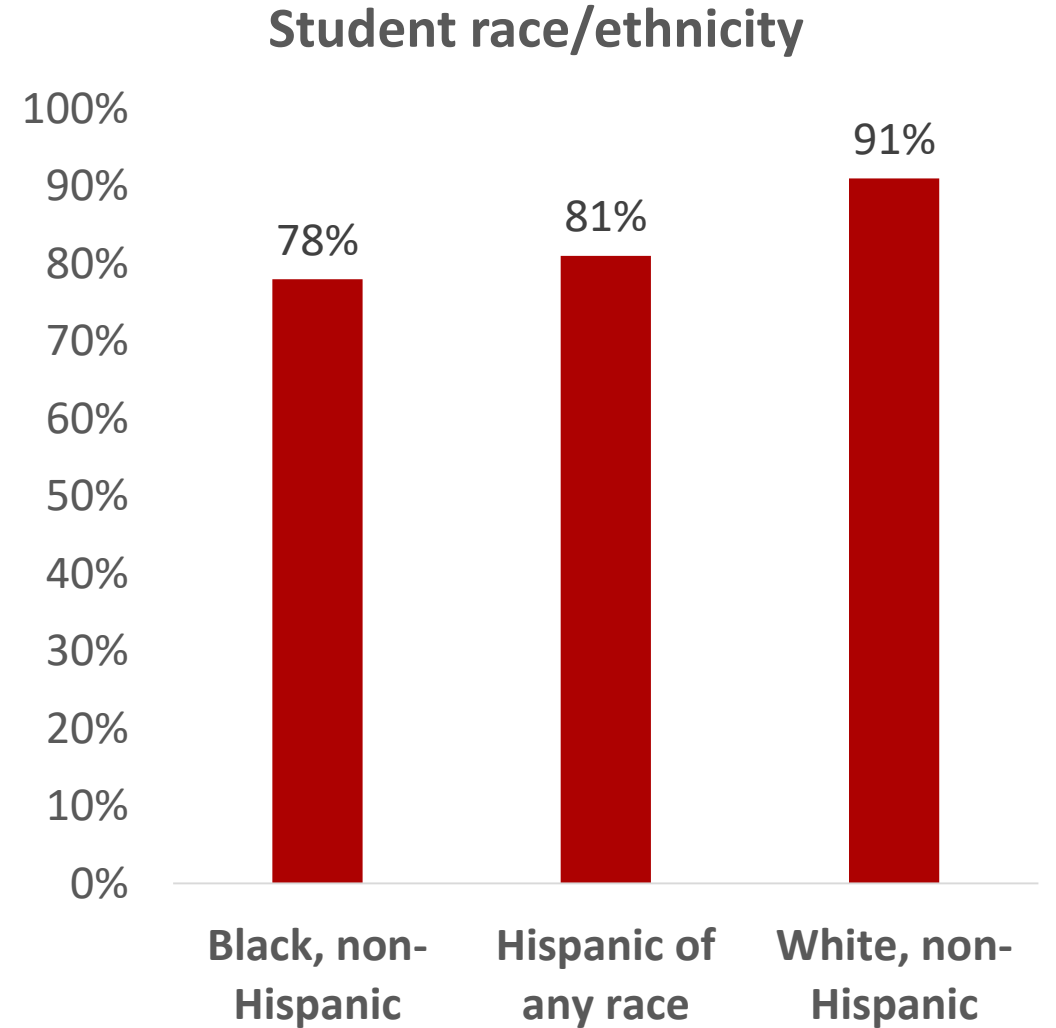
The problem

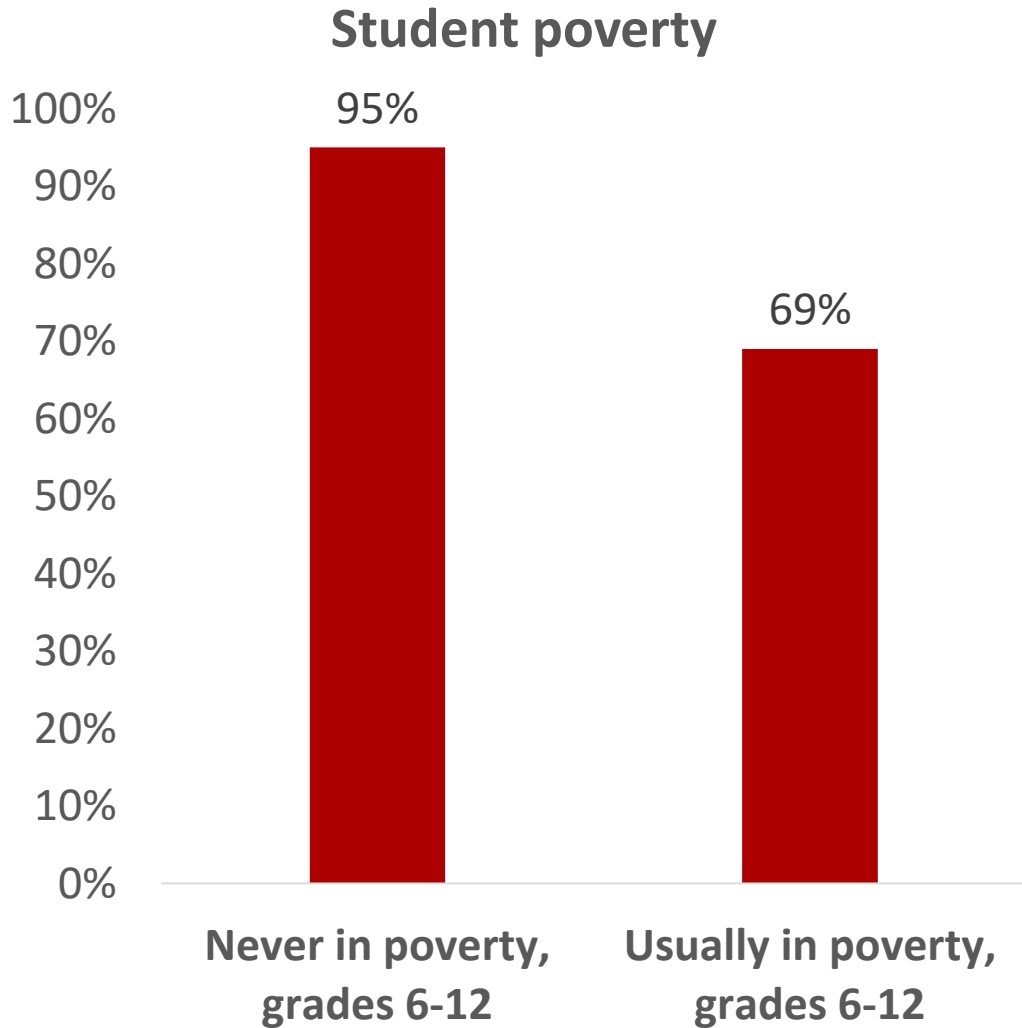Students in poverty and African-American and Hispanic students have worse educational outcomes

Actual dropout rates
by student poverty and race/ethnicity

Student poverty

- Never in poverty, grades 6-12: 3%
- Usually in poverty, grades 6-12: 21%

Student race/ethnicity

- Black, non-Hispanic: 14%
- Hispanic of any race: 13%
- White, non-Hispanic: 7%

Based on the 2007-08 6th grade cohort (N = 54,465).

Actual on-time HS graduation rates by student poverty and race/ethnicity

Student poverty

- Never in poverty, grades 6-12: 95%
- Usually in poverty, grades 6-12: 69%

Student race/ethnicity

- Black, non-Hispanic: 78%
- Hispanic of any race: 81%
- White, non-Hispanic: 91%

Based on the 2007-08 6th grade cohort (N = 54,465).

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Actual postsecondary enrollment rates by student poverty and race/ethnicity

Student poverty

- Never in poverty, grades 6-12: 83%
- Usually in poverty, grades 6-12: 59%

Student race/ethnicity

- Black, non-Hispanic: 66%
- Hispanic of any race: 69%
- White, non-Hispanic: 76%
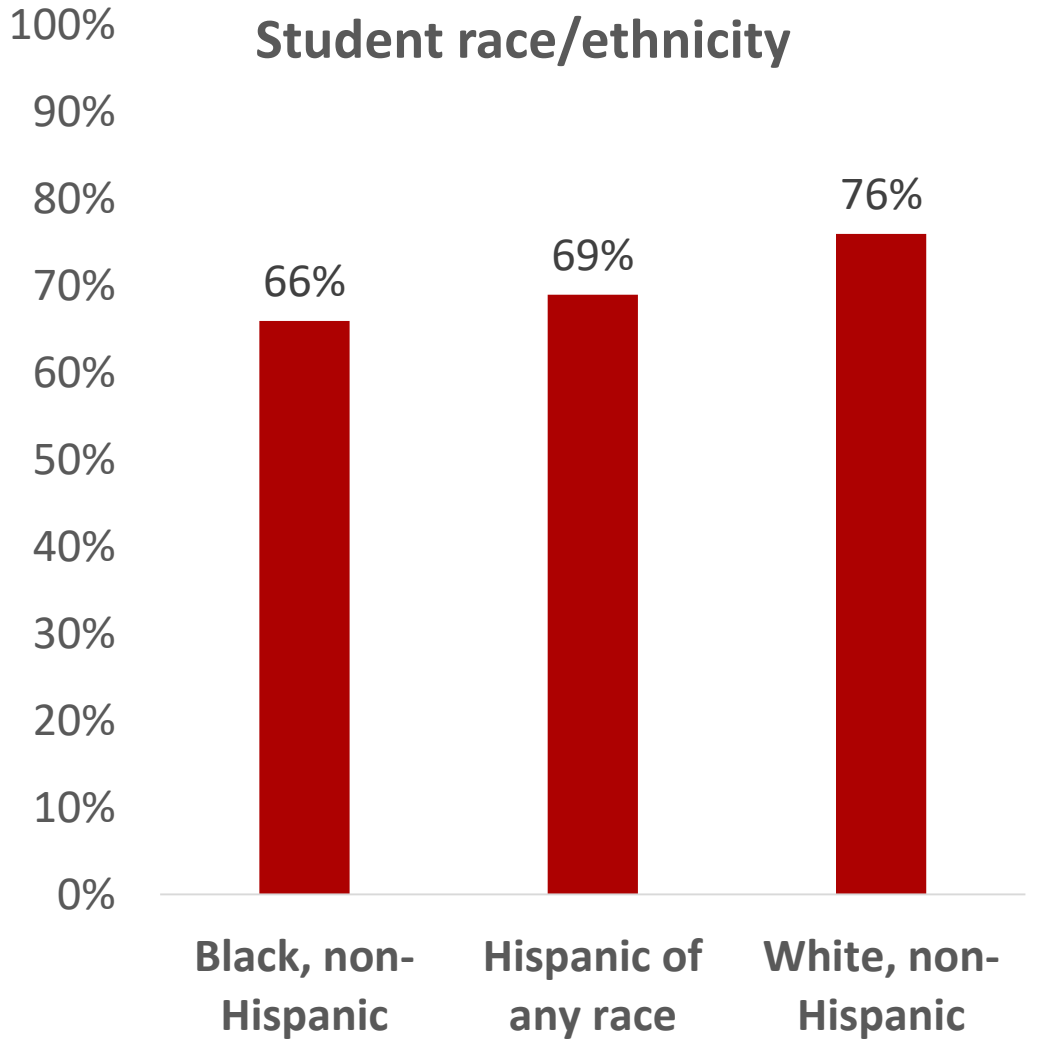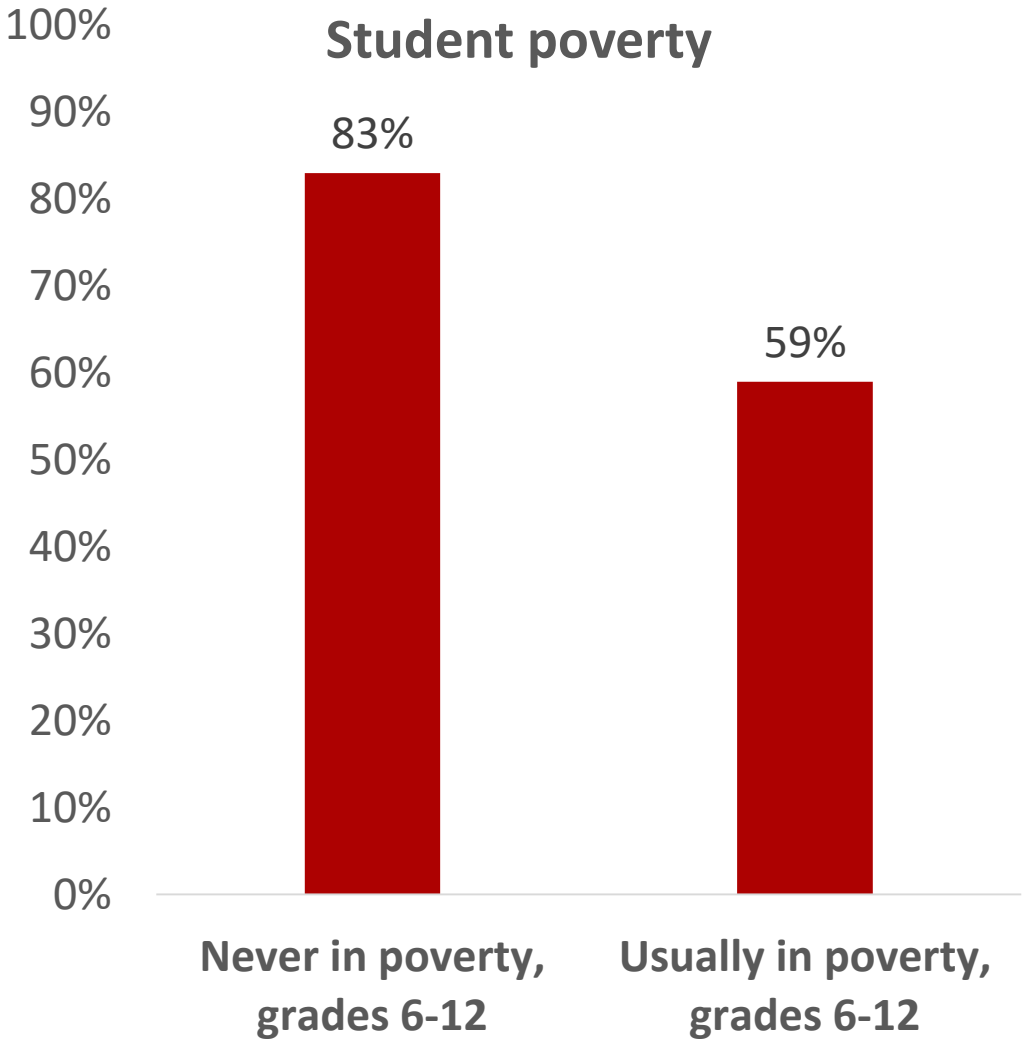
Within first year after on-time high school graduation. Based on the 2007-08 6th grade cohort (N = 54,465).

Actual mean HSA Algebra scores by student poverty and race/ethnicity

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Student poverty

448	419
Never in poverty, grades 6-12	Usually in poverty, grades 6-12

Student race/ethnicity

418	429	447
Black, non-Hispanic	Hispanic of any race	White, non-Hispanic
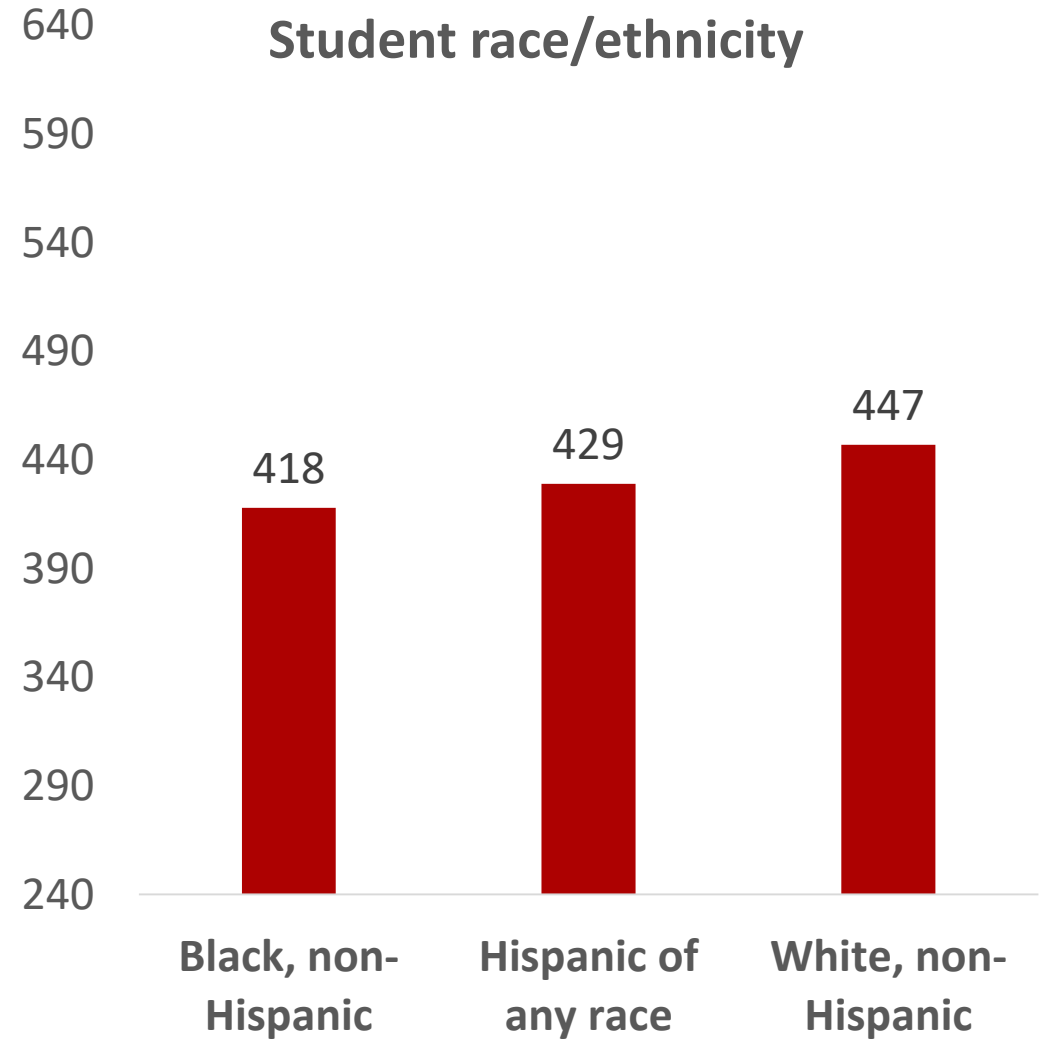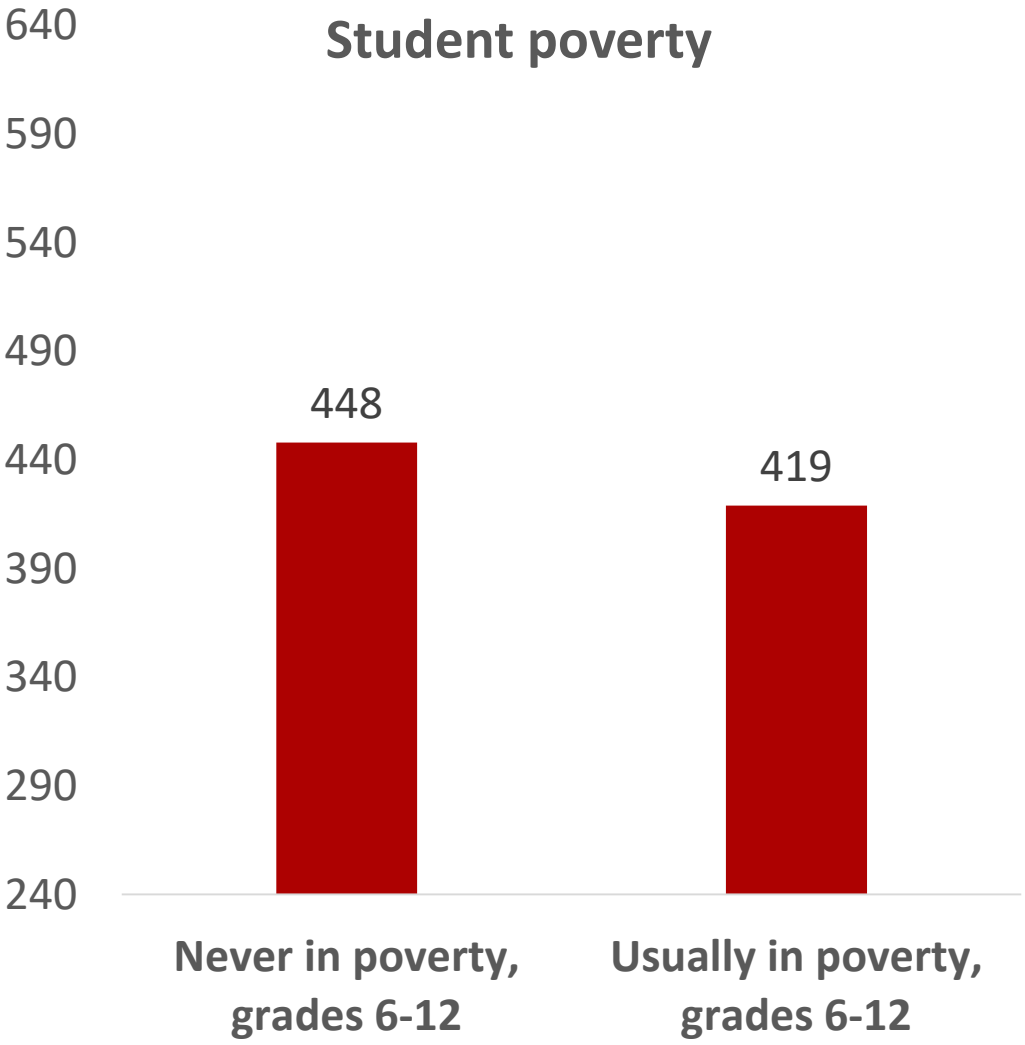
Based on the 2007-08 6th grade cohort (N = 54,465). Highest score. Proficient = 412. Advanced = 450.

Schools matter

Schools matter

"Multilevel, or hierarchical, models have brought about *a revolution in the analysis of school effects*. Rather than choosing between the student level or school level as the primary unit of analysis, HLMs allow the researchers to *simultaneously model hypotheses about effects that occur at each level*. These advances allow educational researchers to model more effectively *how, and for whom, schools make a difference*."

> – Schools and Inequality: A Multilevel Analysis of Coleman's Equality of Educational Opportunity Data (Borman & Dowling, 2010)

Student factors 44%

School factors 56%

Test scores
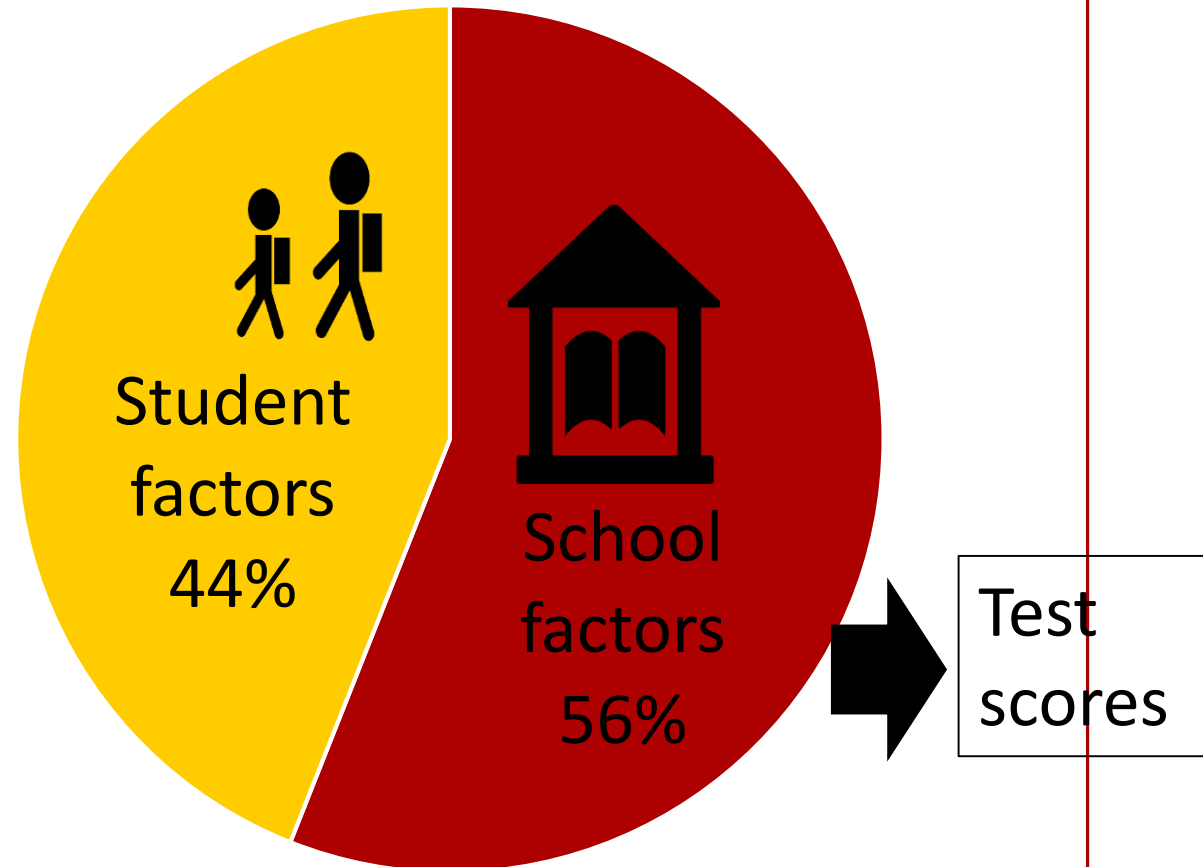
How does the MLDS Center measure poverty?

How does the MLDS Center define "poverty"?

MLDS Center "poverty":
Eligible for FARMS

Federal poverty $24,858

Free meals $31,980

Reduced meals $45,510

Median income in MD $92,049

Household income thresholds for a family of 4

How does the MLDS Center measure poverty?

Timing

(6th – 12th grade)

Concentration

(school average duration)

Duration

(proportion of time)

School poverty

Student poverty

Source: Chaudry & Wimer, 2016.
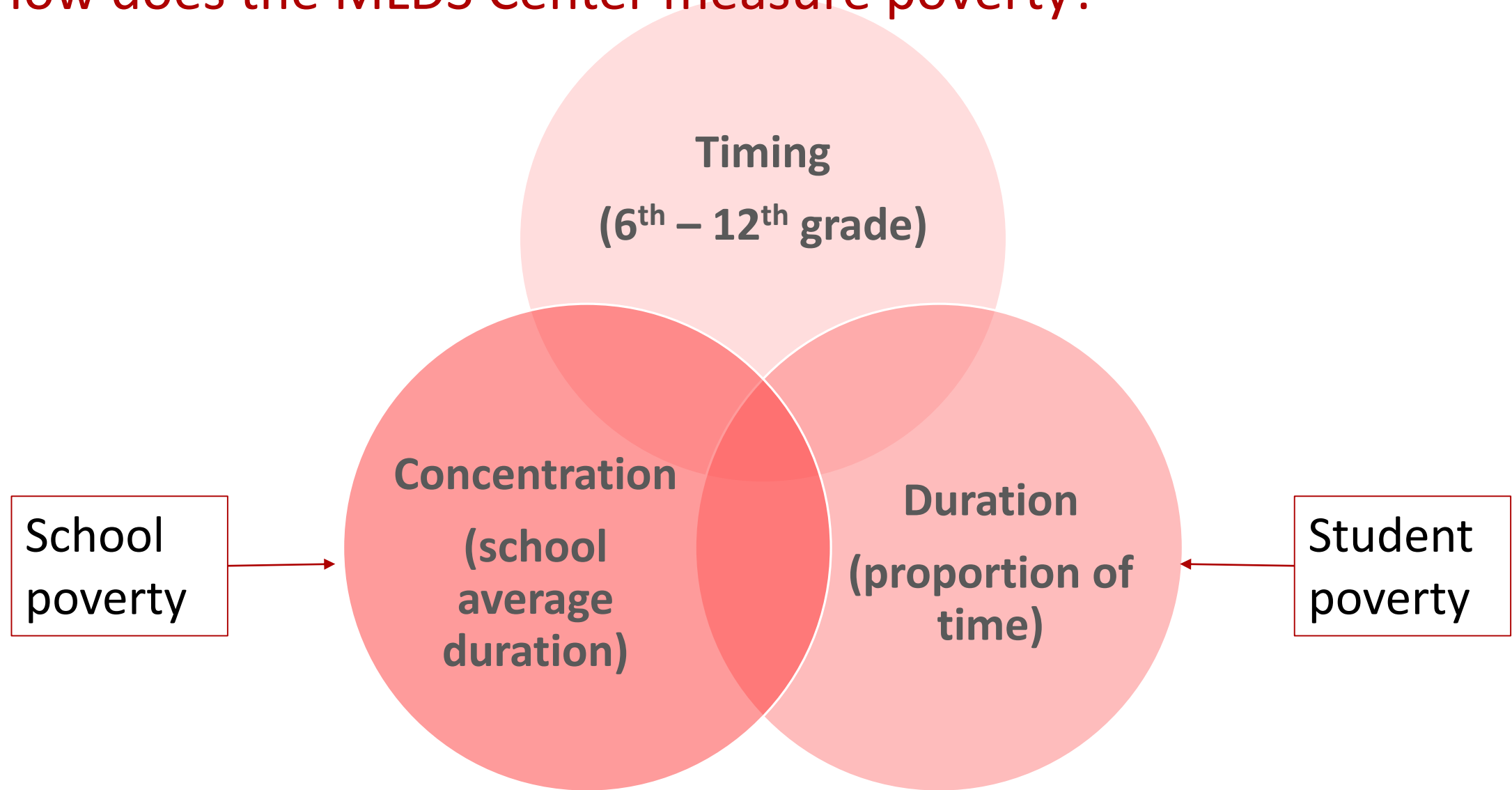
Results from Maryland's data

Disentangling the roles of student poverty, school concentration of poverty, student race/ethnicity, and school racial/ethnic composition

Overview of findings

- Students who experienced poverty for longer periods of time have worse educational outcomes
- School concentration of poverty, regardless of individual experience, usually predicts worse educational outcomes
- Racial and ethnic gaps in standardized test scores persist regardless of poverty
- Racial and ethnic gaps in dropout, graduation, and postsecondary enrollment disappear or are reversed when controlling for poverty and school composition

Results: Dropping out of school

Predicted likelihood of dropping out of school
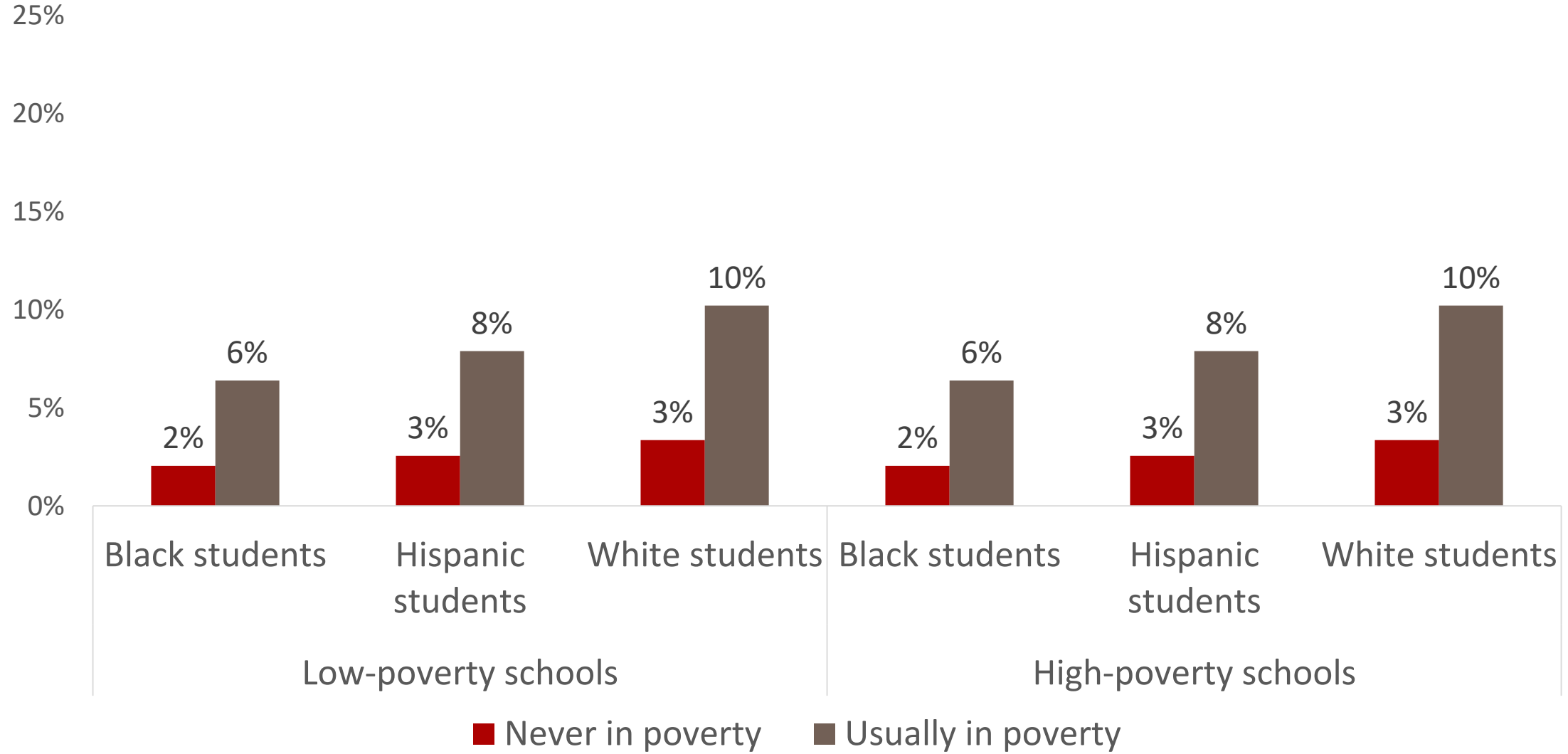
Model-based predictions for students in schools with average racial/ethnic composition, based on the 2007-08 6th grade cohort (N = 54,465).

Dropout: Summary

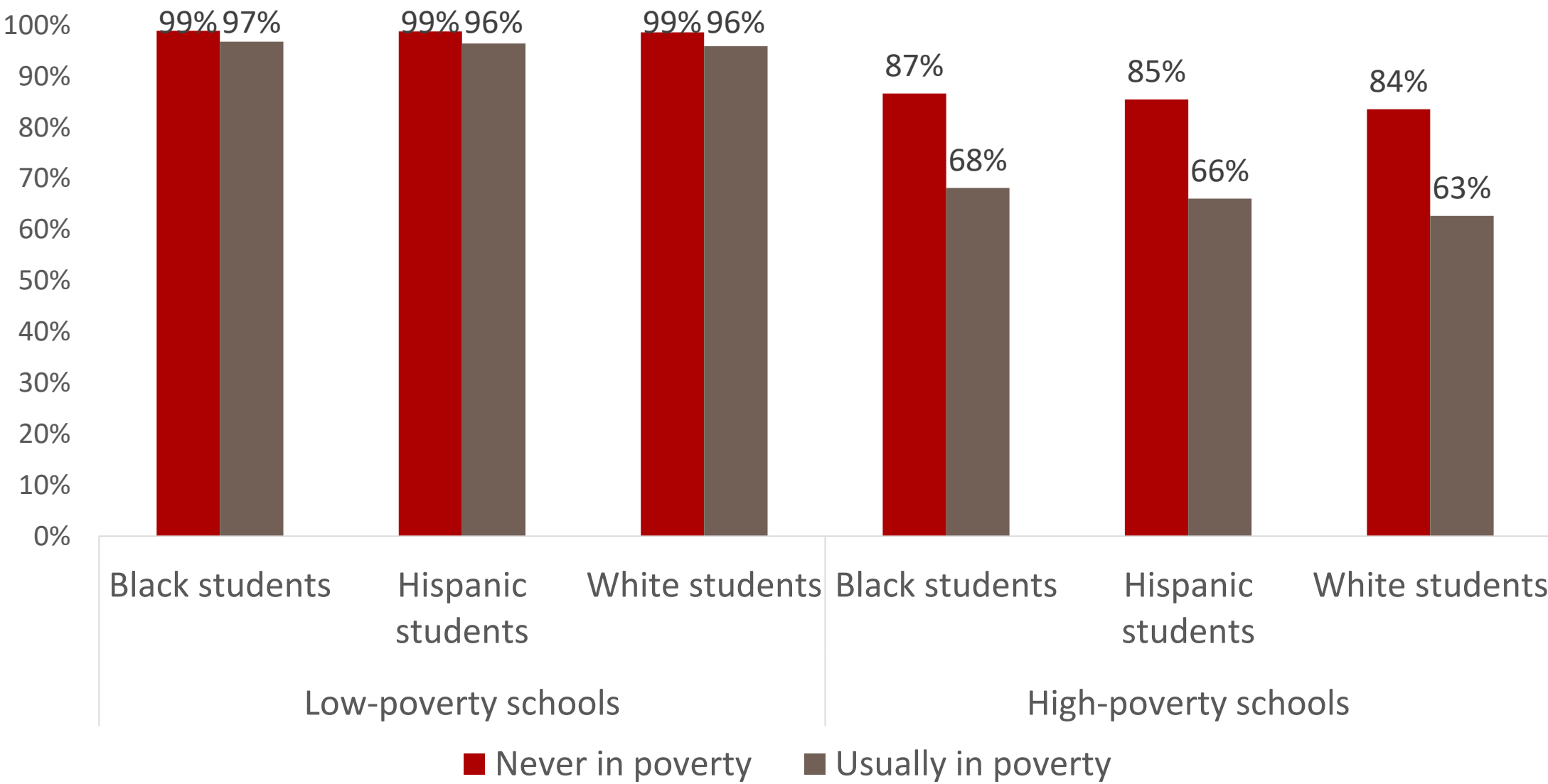Controlling for poverty and race/ethnicity:

1. Student poverty: Students with longer duration of poverty are more likely to drop out than similar students with shorter duration of poverty

2. School poverty: Not a significant factor

3. Student race/ethnicity: Hispanic and African-American students are **less** likely to drop out than white students with similar poverty backgrounds in similar schools

4. School race/ethnicity composition: Students in schools with larger African-American populations are more likely to drop out than similar students in schools with similar average poverty but with smaller African-American populations

Predicted dropout: Summary

Factor	Relationship with outcome
Student poverty	↑
School average poverty	—
Student race/ethnicity – African-American	↓
Student race/ethnicity – Hispanic	↓
School race/ethnicity composition – Percent African-American	↑
School race/ethnicity composition – Percent Hispanic	—

Results: High school graduation and postsecondary enrollment

Predicted likelihood of on-time graduation

Model-based predictions for students in schools with average racial/ethnic composition, based on the 2007-08 6th grade cohort (N = 54,465).

Predicted HS graduation on time: Summary

Controlling for poverty and race/ethnicity:

1. Student poverty: Students with longer duration of poverty are less likely to graduate from high school on time

2. School poverty: Students who attend schools with longer average duration of poverty are less likely to graduate on time

3. Student race/ethnicity: Hispanic and African-American students are *more* likely to graduate on time than white students with similar poverty backgrounds

4. School race/ethnicity composition: Students in schools with higher African-American school composition are less likely to graduate on time; students in schools with higher Hispanic populations are *more* likely to graduate on time

Predicted HS graduation on time: Summary

Factor	Relationship with outcome
Student poverty	↓
School average poverty	↓
Student race/ethnicity – African-American	↑
Student race/ethnicity – Hispanic	↑
School race/ethnicity composition – Percent African-American	↓
School race/ethnicity composition – Percent Hispanic	↑

Predicted HS graduation ever: Summary

Controlling for poverty and race/ethnicity:

1. Student poverty: Students with longer duration of poverty are less likely to ever graduate from high school

2. School poverty: Students who attend schools with longer average duration of poverty are less likely to ever graduate from high school

3. Student race/ethnicity: Hispanic and African-American students are *more* likely to ever graduate from high school than white students with similar poverty backgrounds

4. School race/ethnicity composition: Students in schools with higher Hispanic populations are *more* likely to ever graduate from high school

Predicted HS graduation ever: Summary

Factor	Relationship with outcome
Student poverty	↓
School average poverty	↓
Student race/ethnicity – African-American	↑
Student race/ethnicity – Hispanic	↑
School race/ethnicity composition – Percent African-American	—
School race/ethnicity composition – Percent Hispanic	↑

Predicted likelihood of enrolling in postsecondary within one year of on-time HS graduation

Model-based predictions for students in schools with average racial/ethnic composition, based on the 2007-08 6th grade cohort (N=46,581 of 54,465).
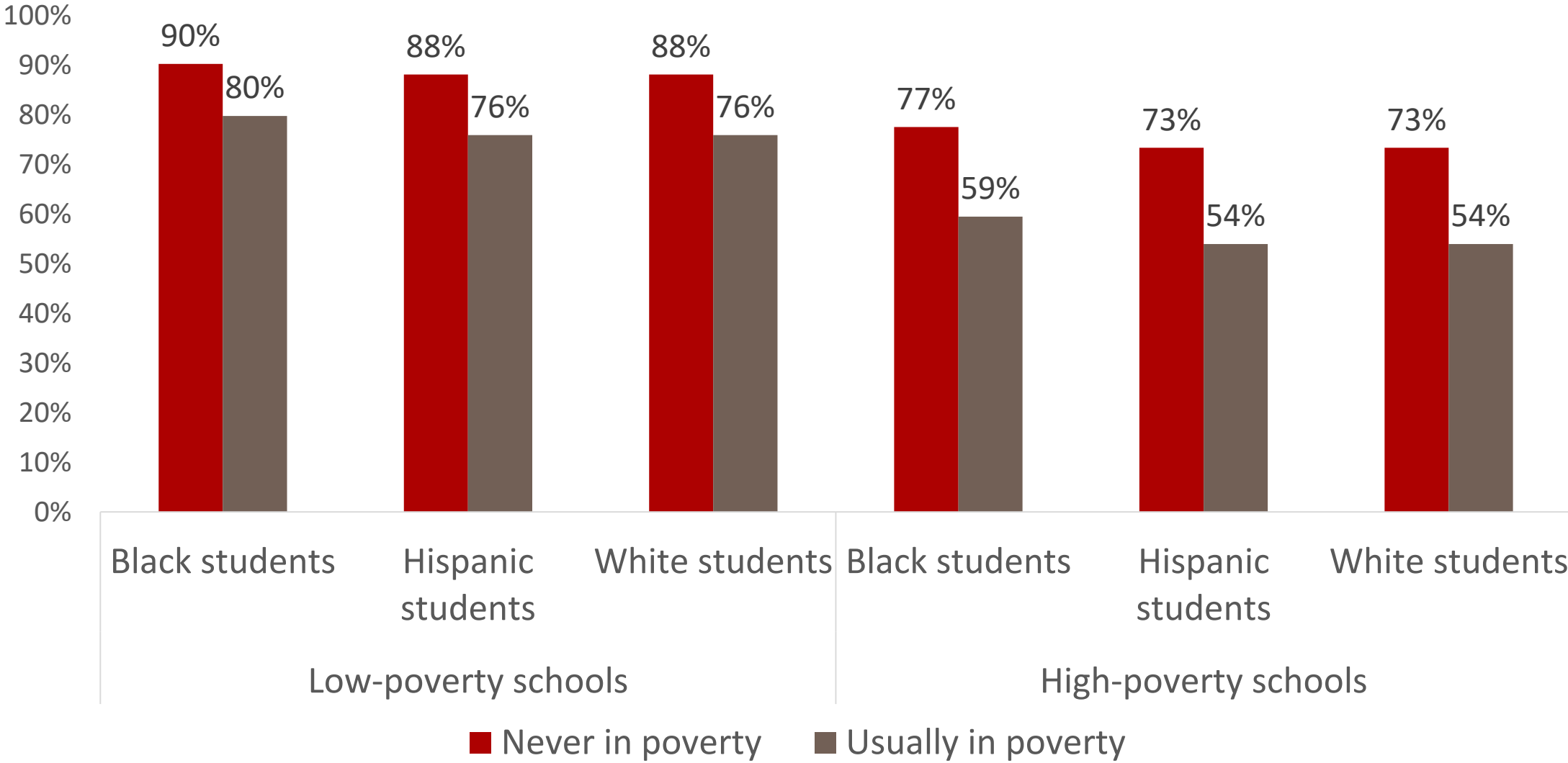
Predicted postsecondary enrollment: Summary

Controlling for poverty and race/ethnicity:

1. Student poverty: Students with longer duration of poverty are less likely to enroll in postsecondary within 1 year of on-time HS graduation

2. School poverty: Students who attend schools with longer average duration of poverty are less likely to enroll in postsecondary

3. Student race/ethnicity: African-American students are *more* likely to enroll in postsecondary than white students with similar poverty backgrounds

4. School race/ethnicity composition: Students in schools with higher African-American and Hispanic populations are *more* likely to enroll in postsecondary

Predicted postsecondary enrollment: Summary

Factor	Relationship with outcome
Student poverty	↓
School average poverty	↓
Student race/ethnicity – African-American	↑
Student race/ethnicity – Hispanic	—
School race/ethnicity composition – Percent African-American	↑
School race/ethnicity composition – Percent Hispanic	↑

Results: Standardized test scores

Predicted HSA Algebra scores
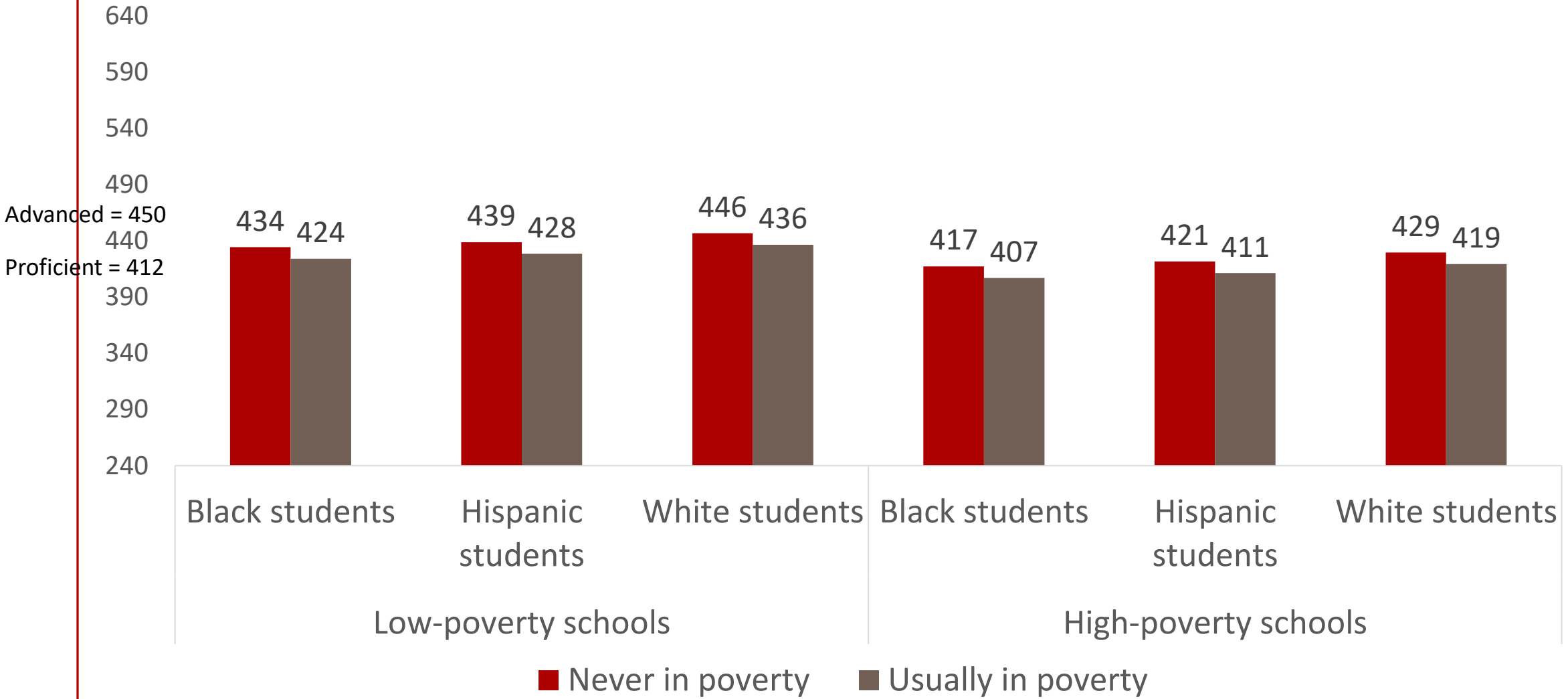
Advanced = 450
Proficient = 412

Legend: Never in poverty (red), Usually in poverty (gray)

Low-poverty schools

Student group	Never in poverty	Usually in poverty
Black students	434	424
Hispanic students	439	428
White students	446	436

High-poverty schools

Student group	Never in poverty	Usually in poverty
Black students	417	407
Hispanic students	421	411
White students	429	419

Model-based predictions for students in schools with average racial/ethnic composition, based on the 2007-08 6th grade cohort (N = 52,261 of 54,465). Highest score.

Predicted standardized test scores: Summary

Controlling for poverty and race/ethnicity:

1. Student poverty: Students with longer duration of poverty are predicted to have lower scores on all tests (HSA Algebra and English and PSAT and SAT Math and Verbal)

2. School poverty: Students who attend schools with longer average duration of poverty are predicted to have lower scores on all tests

3. Student race/ethnicity: African-American and Hispanic students are predicted to have lower scores on all tests than white students with similar poverty backgrounds

4. School race/ethnicity composition: Students in schools with higher African-American populations are predicted to have *higher* scores on some tests; Students in schools with higher Hispanic populations are predicted to have *higher* scores on some tests

Predicted standardized test scores: Summary

Factor	Relationship with outcome
Student poverty	↓
School average poverty	↓
Student race/ethnicity – African-American	↓
Student race/ethnicity – Hispanic	↓
School race/ethnicity composition – Percent African-American	Varies
School race/ethnicity composition – Percent Hispanic	Varies

Summary

Summary of findings

- Students who experienced poverty for longer periods of time have worse educational outcomes
- School concentration of poverty, regardless of individual experience, usually predicts worse educational outcomes
- Racial and ethnic gaps in standardized test scores persist regardless of poverty
- Racial and ethnic gaps in dropout, graduation, and postsecondary enrollment disappear or are reversed when controlling for poverty and school composition

Summary of findings

	Dropout	On time graduation	Ever graduate	Post-secondary enrollment	HSA Algebra	HSA English	PSAT Math	PSAT Verbal	SAT Math	SAT Verbal
Poverty										
Student poverty	↑	↓	↓	↓	↓	↓	↓	↓	↓	↓
School average poverty	↔	↓	↓	↓	↓	↓	↓	↓	↓	↓
Race/Ethnicity										
Student										
African-American	↓	↑	↑	↑	↓	↓	↓	↓	↓	↓
Hispanic	↓	↑	↑	↔	↓	↓	↓	↓	↓	↓
School Composition										
African-American	↑	↓	↔	↑	↔	↑	↔	↑	↓	↔
Hispanic	↔	↑	↑	↑	↑	↑	↔	↔	↔	↑

↓↑ The factor has an **undesirable** relationship with outcome

↓↑ The factor has a **desirable** relationship with outcome

↔ The factor has no relationship with outcome

Next Steps

- Examine the associations between student and school poverty and workforce outcomes

- Explore additional student and school factors associated with outcomes

- Examine protective effects that mitigate the negative role of poverty

- Publish research report to website

Questions?

- Contact us: MLDS.Center@Maryland.gov