City Study 2019: Denver

Acknowledgement

- Student-level data were provided by the Colorado Department of Education.

- RootED and Denver Public Schools assisted CREDO with verifying the list of public schools in Denver.

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This Report

- This report on *Denver* is one in a series of studies examining school performance across selected U.S. cities.

- Performance is defined as how much academic growth students made from one year to the next.

- The performance of students in Denver is benchmarked to the state average, accounting for student characteristics.

- We first track the growth of Denver overall and by sector using data from 2013-14 to 2016-17.

- We then further explore how one-year academic growth for the period ending in Spring 2017 differs by sector, school type, race, poverty status, English language learner (ELL) status, special education status, and gender.

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Types of Charters

- ## Charter Networks

  - Charter Management Organization (CMO): To qualify as a CMO, an organization must oversee the operation of at least three charter schools. Further, the CMO must be the charter holder for all of the schools operated by the CMO.

  - Education Management Organization (EMO): To qualify as an EMO, an organization must provide services under contract to at least three separate charter schools, but does not hold the charter for any school they serve. The EMO must answer to the school's charter holder in addition to authorizers and state governance.

- ## Independent Charter Schools

  - To qualify as an independent charter school, an organization must oversee the operation of a single charter school. The charter-holding organization may run the school directly or they may contract with an organization which provides services to one or two charter schools.

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Denver-Specific Analysis

- The Denver City Report includes analysis for an additional sector: Innovation Schools.

    - Three types of innovation schools
        - <u>District-run innovation schools</u>: district-managed public schools with a strategic plan that allows waivers to specific district policies, state statutes, and collective bargaining agreements with the goal of improving student outcomes and executing with excellence a specific model
        - <u>Innovation zone (iZone)</u>: a group of public innovation schools that share common interests and seek additional flexibility
        - <u>Schools with innovation status in an Innovative Management Organization (IMO)</u>, which is group of public schools that share a model and are overseen by an executive principal, with the ability to leverage their resources across school sites
    - Learn more at: https://portfolio.dpsk12.org/dps-family-of-schools/

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Presentation of Results

- The results display two sets of comparisons

  - The progress of Denver students is **benchmarked against the state average learning gains, accounting for student characteristics.**

    - Positive numbers represent better than average performance.

    - Negative numbers represent worse than average performance.

    - Significance in the difference between students in the city and the average state performance is represented by black asterisks.

  - The progress of charter school students within Denver is then **compared to the performance of similar TPS students within Denver.**

    - Significance in the difference between a student group in charter schools and the same student group in TPS is represented by colored asterisks.

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Measurement of Academic Growth

- Results are graphically displayed on two axes:

  - The left axis indicates learning gains of Denver students relative to the average learning gains of students with similar characteristics in the state, measured in **standard deviation units.**
  - The right axis displays the same learning gains measured in **days of learning.**
    - The baseline of 0.00 represents 180 days of learning.
    - Positive performance translates to greater gains in days of learning.
    - Negative performance translates to fewer gains in days of learning.

- The table below shows a transformation of standard deviation units to days of learning.

Standard Deviations	Days of Learning
0.05	30
0.10	59
0.15	89
0.20	118
0.25	148
0.30	177
0.35	207

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Roadmap for Graphs

This menu includes links to specific analyses throughout the report.
In the following slides, the same menu is shown on the right-hand side.

Breakout by

Further Breakout by

Sector
- Charter Network
- School-Level

All Students

Overall Denver Results

Comparison of Peers

Race
- Black Students
- Hispanic Students

Subgroup
- Poverty Status
- English Language Learner Status
- Special Education Status

Gender
- Female Students
- Male Students

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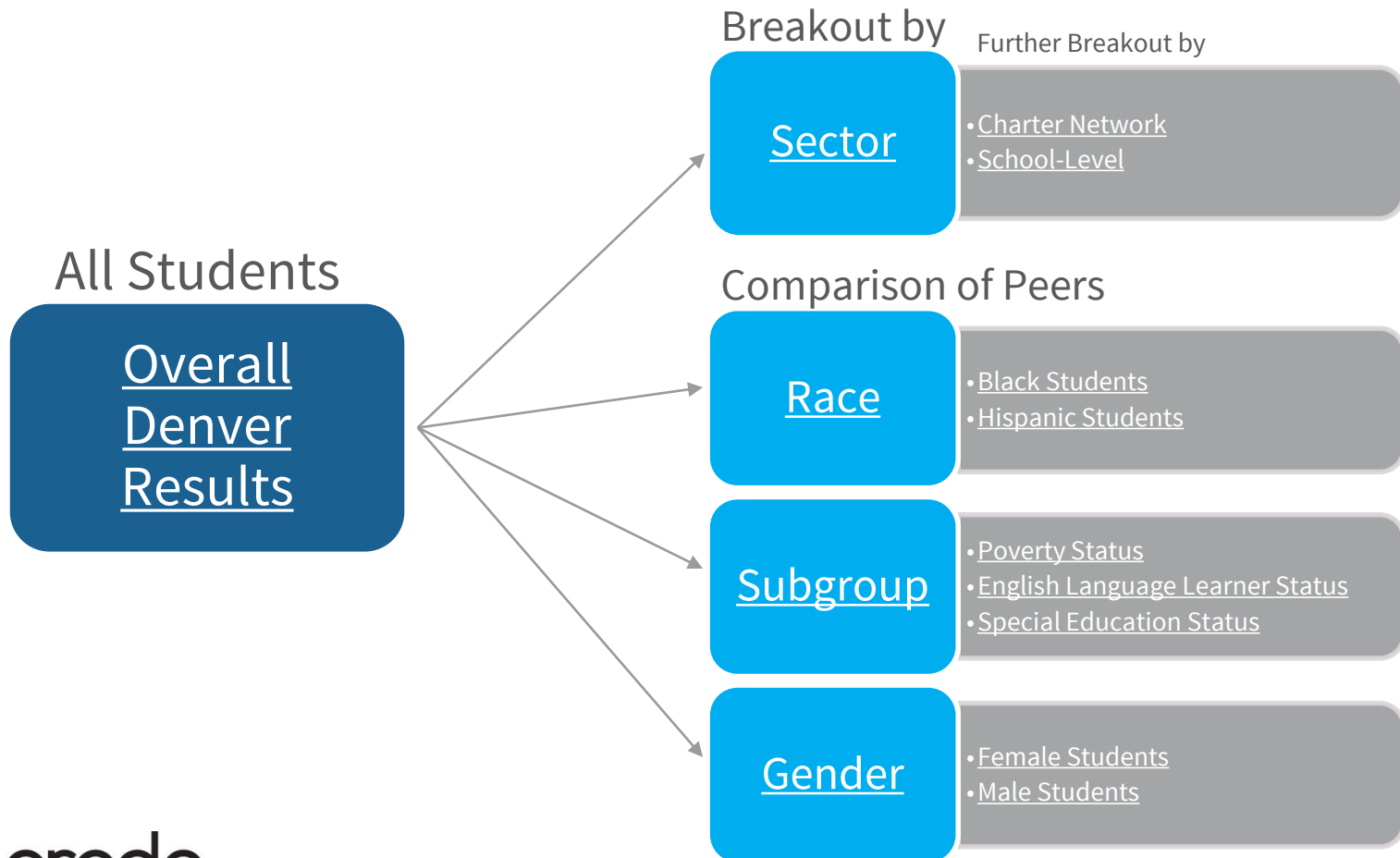
Denver Analysis: All Students

Average One-Year Learning Gains for All Denver Students Compared to the State Average Learning Gains, by Year and Subject
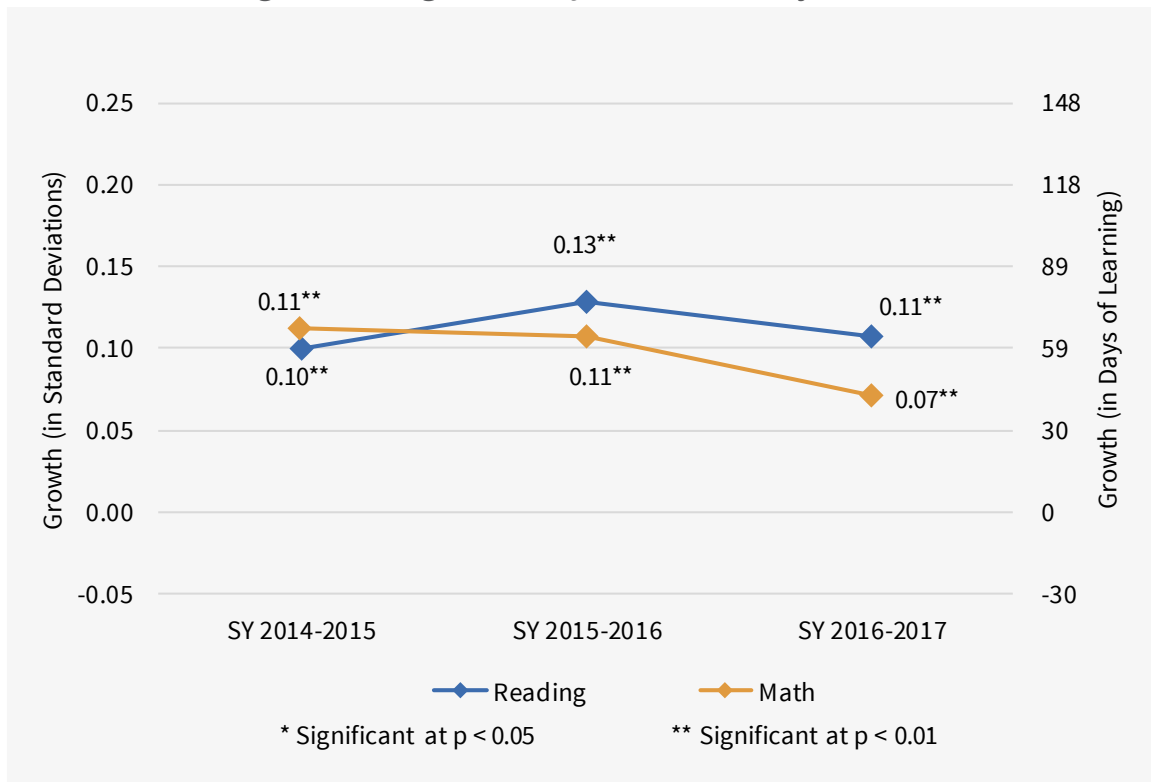
The 0.00 line represents the average learning gains of the entire state.
These results capture one-year academic growth for the period ending in the Spring of each school year (SY).

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Sector Analysis

Click the buttons below for reading and math growth of Denver schools relative to the state average learning gains by year and sector.

Sector Analysis (Reading)

Sector Analysis (Math)

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Sector Analysis: Reading

Learning Gains in Reading for Students in Denver Charter Schools, Denver Innovation Schools, and Denver TPS Compared to the State Average Learning Gains by Year

Roadmap for Graphs

Overall Denver

Sector Analysis
- Charter Network
- School-Level

Race Analysis
- Black Students
- Hispanic Students

Subgroup Analysis
- Poverty Status
- ELL Status
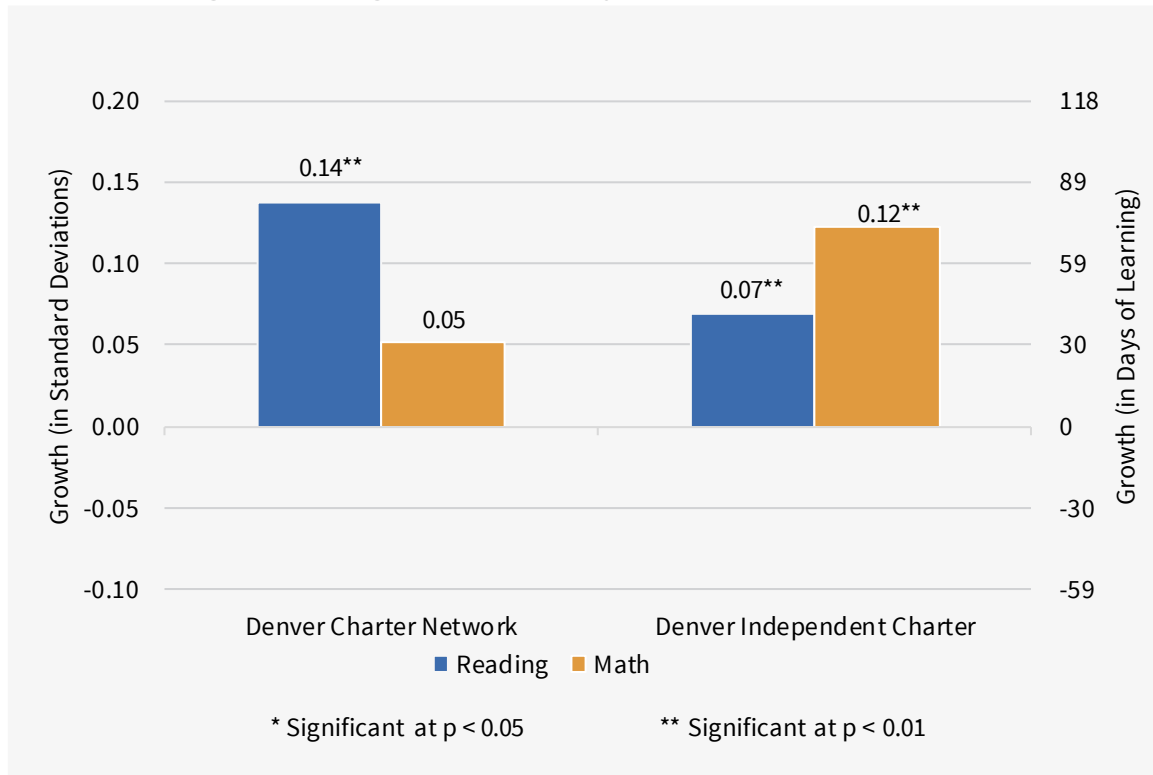- Special Ed. Status

Gender Analysis
- Female Students
- Male Students

* Growth significantly stronger than that of TPS

* Growth significantly weaker than that of TPS

[C] 0.23** *
[I]0.18**
[C] 0.16** *
[I]0.07
[T] 0.06**
[T] 0.09**
[C] 0.12**
[I]0.10*
[T] 0.10**

Growth (in Standard Deviations)
Growth (in Days of Learning)

SY 2014-2015   SY 2015-2016   SY 2016-2017

····■···· Charter   ---●--- Innovation   —▲— TPS

* Significant at p < 0.05   ** Significant at p < 0.01

The 0.00 line represents the average learning gains of the entire state.
These results capture one-year academic growth for the period ending in the Spring of each school year (SY).

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Sector Analysis: Math

Learning Gains in Math for Students in Denver Charter Schools, Denver Innovation Schools, and Denver TPS Compared to the State Average Learning Gains by Year

* Growth significantly stronger than that of TPS

* Growth significantly weaker than that of TPS

* Significant at p < 0.05 ** ** Significant at p < 0.01

The 0.00 line represents the average learning gains of the entire state.
These results capture one-year academic growth for the period ending in the Spring of each school year (SY).

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Charter Network Analysis

Learning Gains for Students in Denver Network-Affiliated Charter Schools and Independent Denver Charter Schools Compared to the State Average Learning Gains, by Subject

* Growth significantly stronger than that of Independent Charters

* Growth significantly weaker than that of Independent Charters

* Significant at $p < 0.05$ ** Significant at $p < 0.01$

The 0.00 line represents the average learning gains of the entire state.
These results capture one-year academic growth for the period ending in Spring 2017.

Roadmap for Graphs

Overall Denver

Sector Analysis
- Charter Network
- School-Level

Race Analysis
- Black Students
- Hispanic Students

Subgroup Analysis
- Poverty Status
- ELL Status
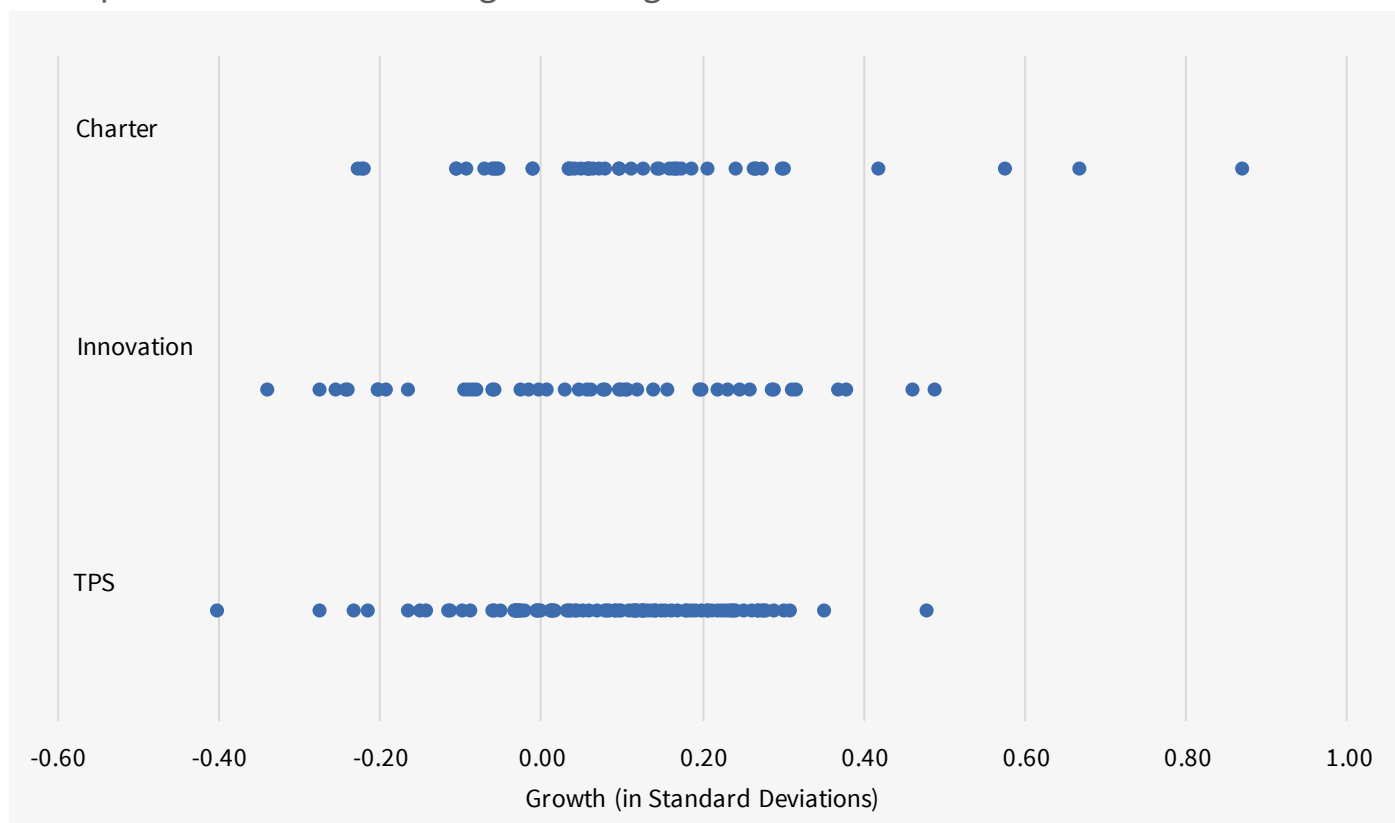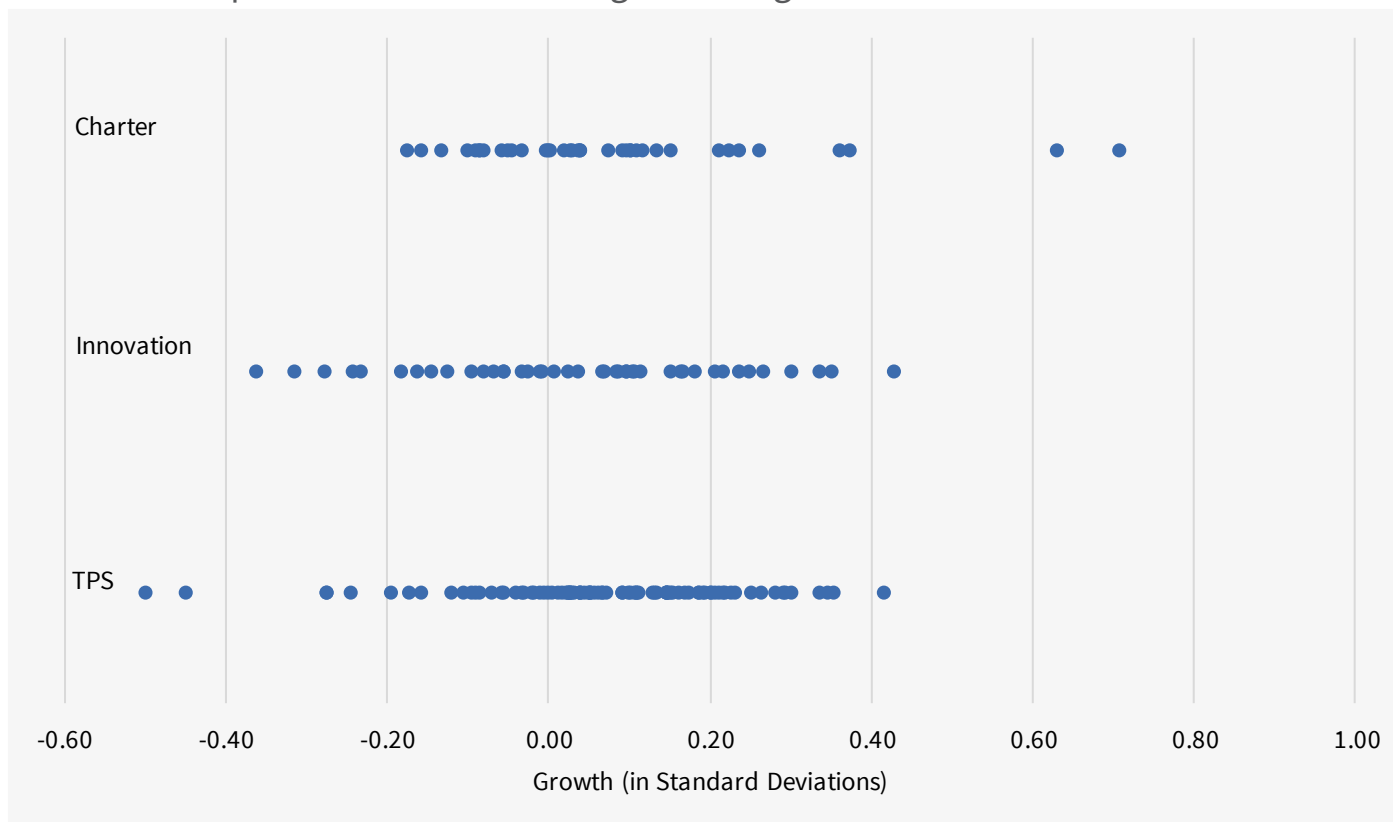- Special Ed. Status

Gender Analysis
- Female Students
- Male Students

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School-Level Performance by Sector

Click the buttons below for reading and math growth of individual Denver schools relative to the state average by sector. The top cluster of dots shows where individual charter schools lie on spectrum of growth, the middle cluster shows that of Innovation schools, and the bottom cluster shows that of individual TPS.

School Growth (Reading)

School Growth (Math)

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School Growth by Sector - Reading

Distribution of Reading Learning Gains of Individual Denver Schools
Compared to the State Average Learning Gains

The 0.00 line represents the average learning gains of the entire state.
These results capture one-year academic growth for the period ending in Spring 2017.

Roadmap
for Graphs

Overall Denver

Sector Analysis

- Charter Network
- School-Level

Race Analysis

- Black Students
- Hispanic Students

Subgroup Analysis

- Poverty Status
- ELL Status
- Special Ed. Status

Gender Analysis

- Female Students
- Male Students

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School Growth by Sector - Math

Distribution of Math Learning Gains of Individual Denver
Schools Compared to the State Average Learning Gains

Growth (in Standard Deviations)

The 0.00 line represents the average learning gains of the entire state.
These results capture one-year academic growth for the period ending in Spring 2017.

Roadmap
for Graphs

Overall Denver

Sector Analysis
- Charter Network
- School-Level

Race Analysis
- Black Students
- Hispanic Students

Subgroup Analysis
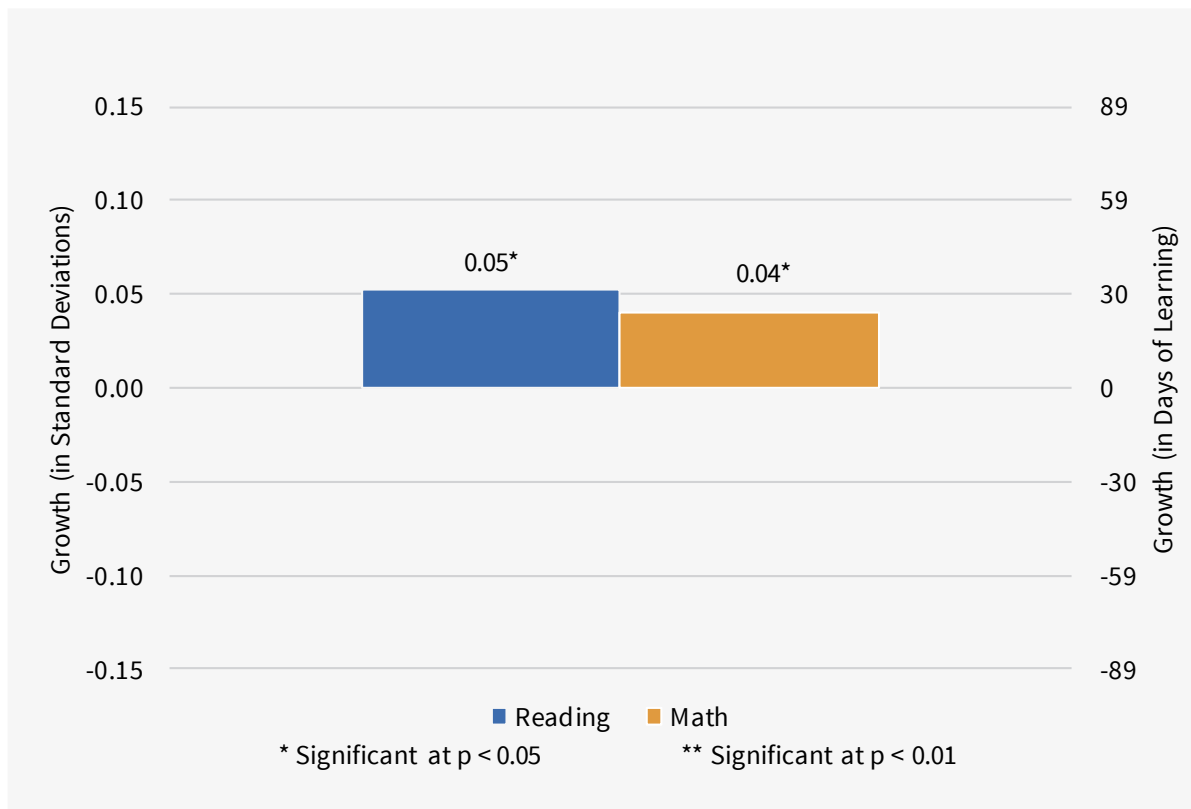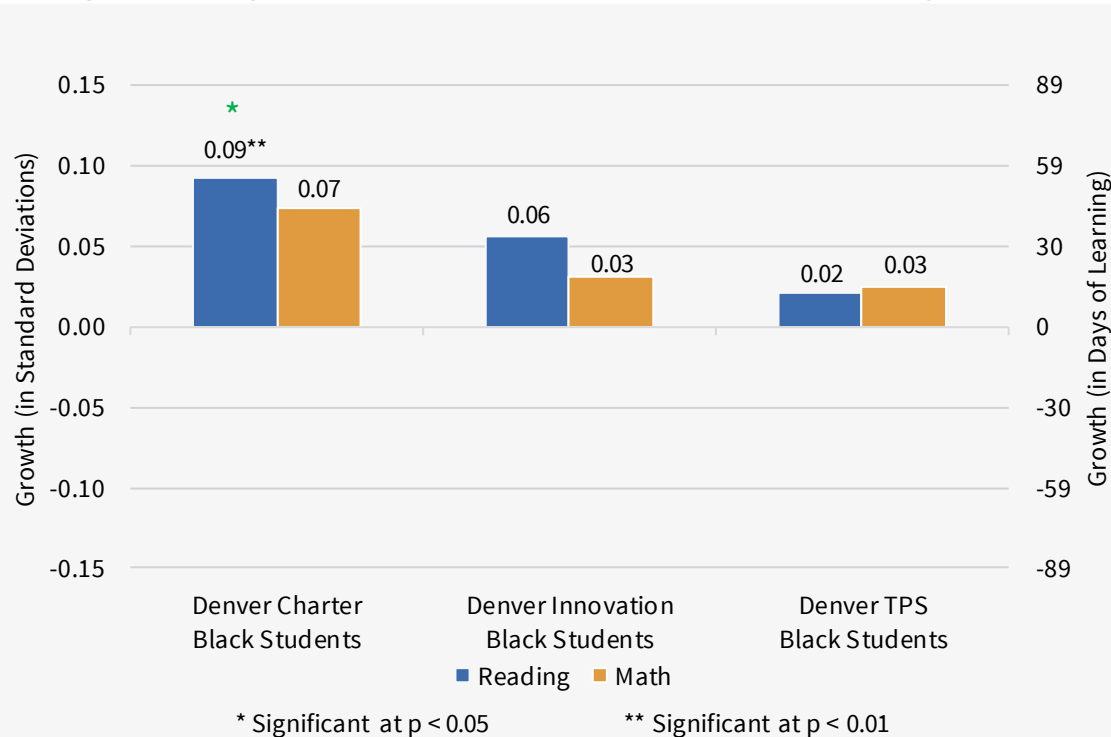- Poverty Status
- ELL Status
- Special Ed. Status

Gender Analysis
- Female Students
- Male Students

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Race Analysis

Click the buttons below for graphs showing the performance of Black students in Denver or Hispanic students in Denver relative to the statewide average learning gains for students of the same race.

Black Students

Hispanic Students

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Race Analysis: Black Students

Learning Gains for All Denver Black Students Compared to the Average Learning Gains of Black Students Statewide, by Subject

* Significant at p < 0.05   ** Significant at p < 0.01

0.05*   0.04*

■ Reading   ■ Math

Growth (in Standard Deviations)

Growth (in Days of Learning)

The 0.00 line represents the average learning gains of Black students in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

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Race Analysis:
Black Students by Sector

Learning Gains for Black Charter School Students, Black Innovation School Students, and Black TPS Students in Denver Compared to the Average Learning Gains of Black Students Statewide, by Subject

* Growth significantly stronger than that of TPS

* Growth significantly weaker than that of TPS

* Significant at p < 0.05   ** Significant at p < 0.01

The 0.00 line represents the average learning gains of Black students in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

Roadmap for Graphs

Overall Denver

Sector Analysis
- Charter Network
- School-Level

Race Analysis
- Black Students
- Hispanic Students

Subgroup Analysis
- Poverty Status
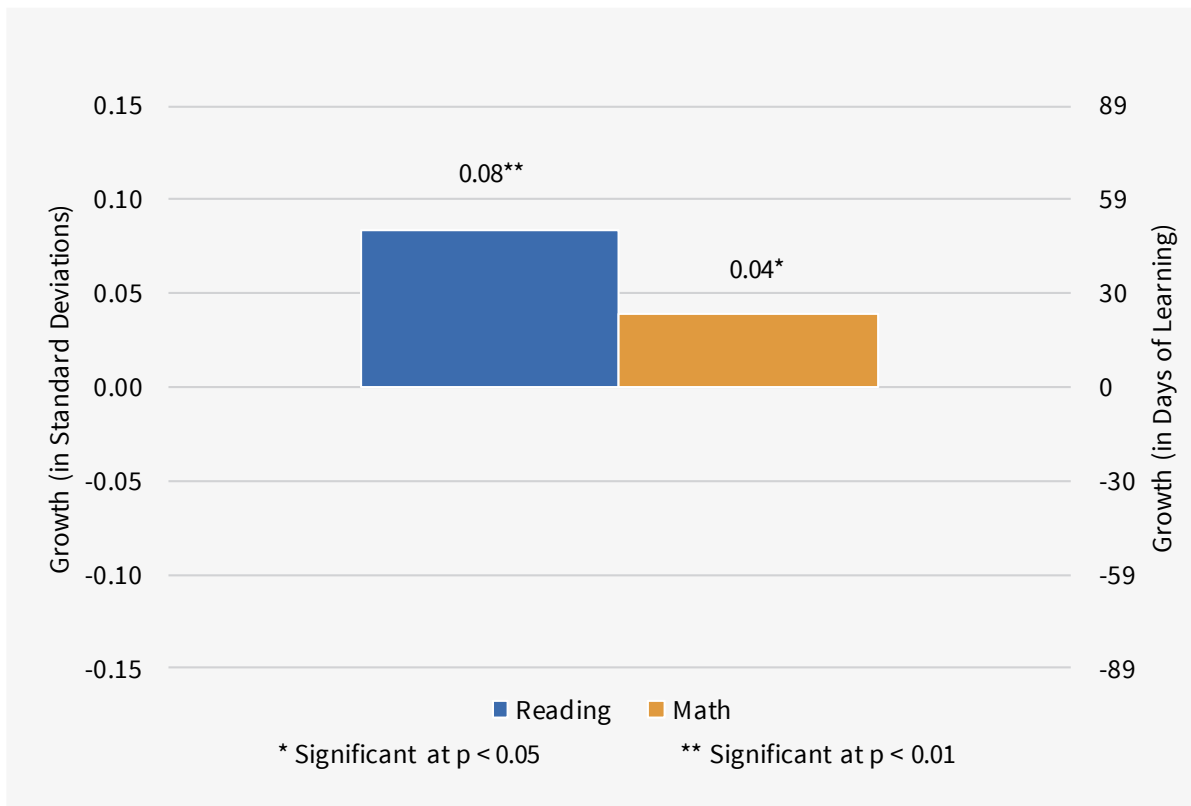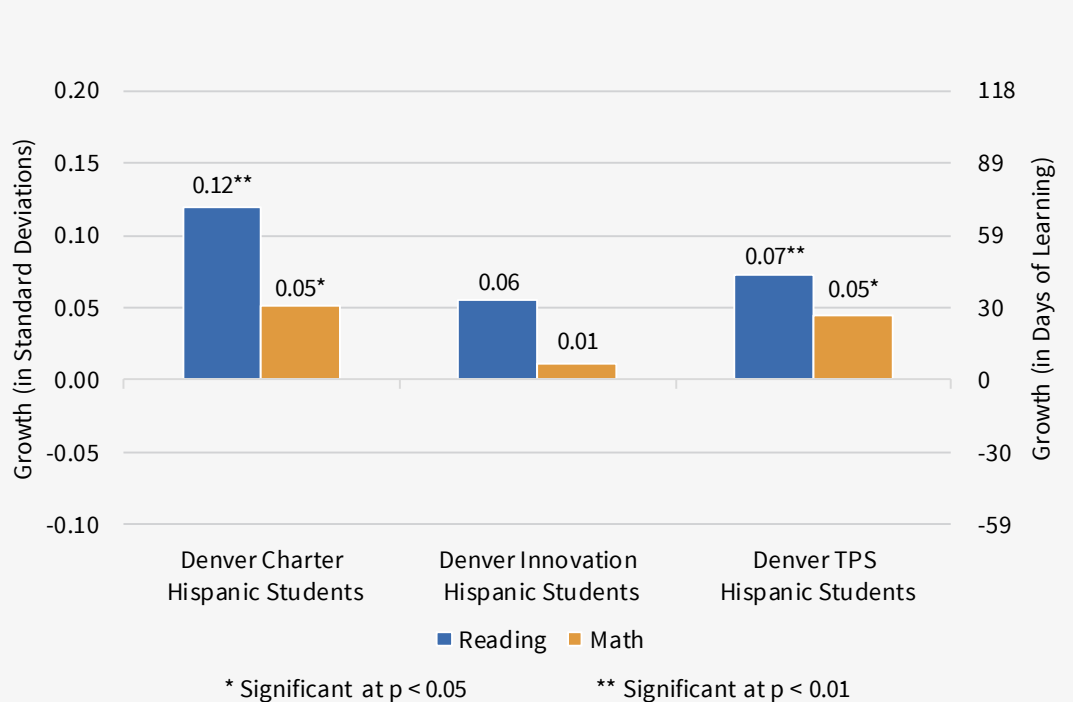- ELL Status
- Special Ed. Status

Gender Analysis
- Female Students
- Male Students

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Race Analysis: Hispanic Students

Learning Gains for All Denver Hispanic Students Compared to the Average Learning Gains of Hispanic Students Statewide, by Subject

Growth (in Standard Deviations) — left axis: 0.15, 0.10, 0.05, 0.00, -0.05, -0.10, -0.15

Growth (in Days of Learning) — right axis: 89, 59, 30, 0, -30, -59, -89

Reading: 0.08**
Math: 0.04*

■ Reading   ■ Math

* Significant at p < 0.05   ** Significant at p < 0.01

The 0.00 line represents the average learning gains of Hispanic students in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

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Race Analysis:
Hispanic Students by Sector

Learning Gains for Hispanic Charter School Students, Hispanic Innovation School Students, and Hispanic TPS Students in Denver Compared to the Average Learning Gains of Hispanic Students Statewide, by Subject

* Growth significantly stronger than that of TPS

* Growth significantly weaker than that of TPS

* Significant at p < 0.05   ** Significant at p < 0.01

The 0.00 line represents the average learning gains of Hispanic students in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

Roadmap for Graphs

Overall Denver

Sector Analysis
• Charter Network
• School-Level

Race Analysis
• Black Students
• Hispanic Students

Subgroup Analysis
• Poverty Status
• ELL Status
• Special Ed. Status

Gender Analysis
• Female Students
• Male Students

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Subgroup Analyses

Click the buttons below for graphs showing the performance of Denver students in poverty, Denver students with English Language Learner designation, or Denver students receiving special education services relative to average learning gains of students of the same subgroup statewide.

Poverty Status

English Language Learner (ELL) Status

Special Education Status

Roadmap for Graphs

Overall Denver

Sector Analysis

- Charter Network
- School-Level

Race Analysis

- Black Students
- Hispanic Students

Subgroup Analysis

- Poverty Status
- ELL Status
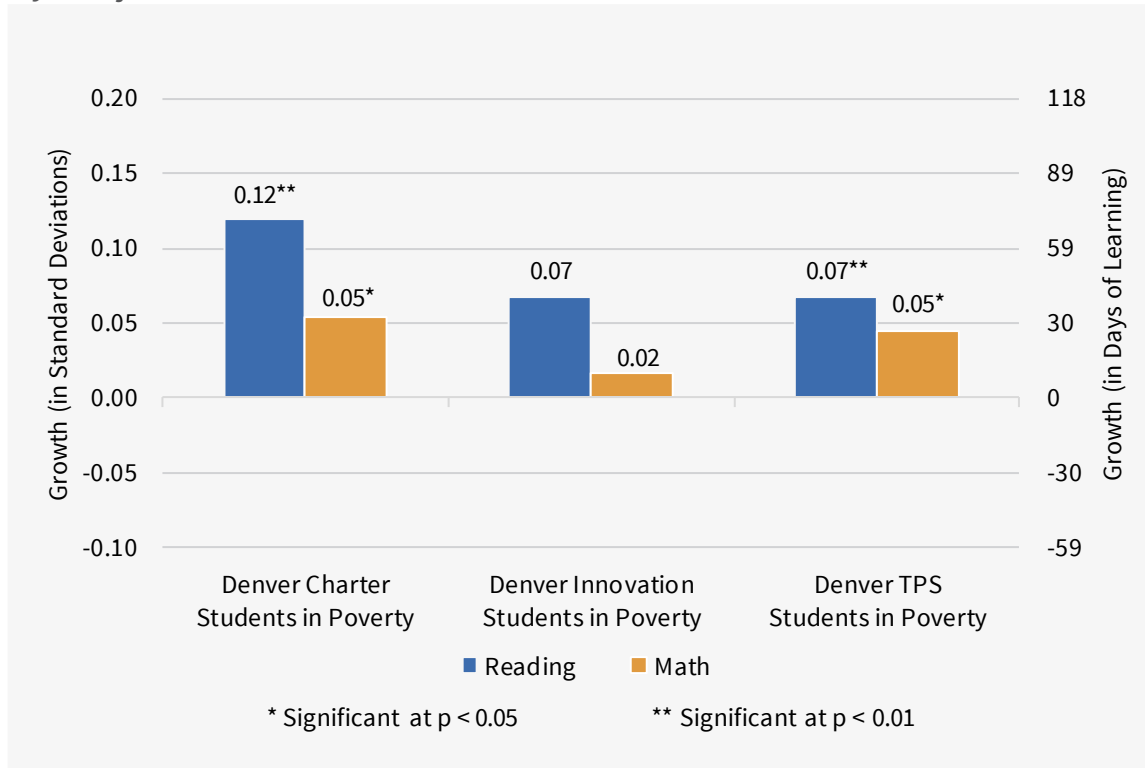- Special Ed. Status

Gender Analysis

- Female Students
- Male Students

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Subgroup Analyses:
Poverty Status Analysis

Learning Gains for All Denver Students in Poverty Compared to the Average Learning Gains of Students in Poverty Statewide, by Subject

Growth (in Standard Deviations)

0.15	89
0.10	59
0.05	30
0.00	0
-0.05	-30
-0.10	-59
-0.15	-89

0.08**

0.04*

Growth (in Days of Learning)

■ Reading   ■ Math

* Significant at p < 0.05   ** Significant at p < 0.01

The 0.00 line represents the average learning gains of students in poverty in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

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Subgroup Analyses:
Poverty Status by Sector

Learning Gains for Denver Charter School Students in Poverty, Denver Innovation School Students in Poverty, and Denver TPS Students in Poverty Compared to the Average Learning Gains of Students in Poverty Statewide, by Subject

* Growth significantly stronger than that of TPS

* Growth significantly weaker than that of TPS

* Significant at p < 0.05   ** Significant at p < 0.01

Roadmap for Graphs

Overall Denver

Sector Analysis
- Charter Network
- School-Level

Race Analysis
- Black Students
- Hispanic Students

Subgroup Analysis
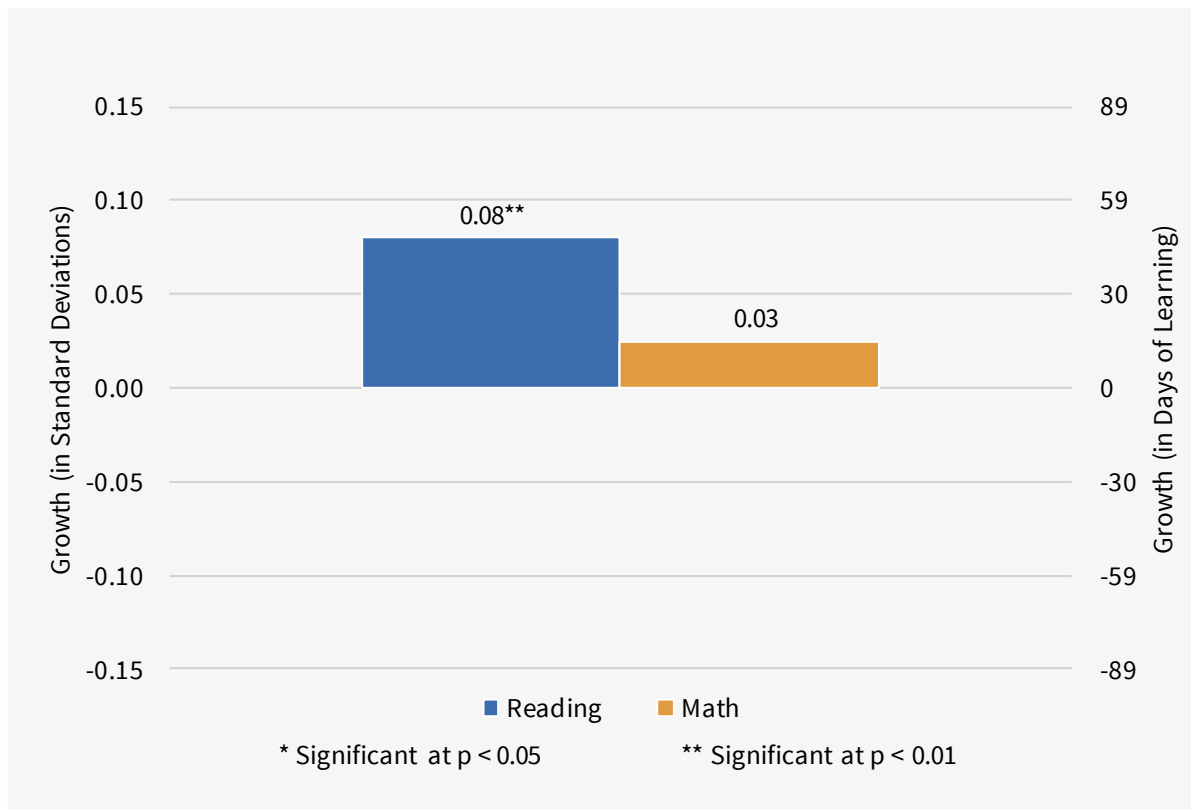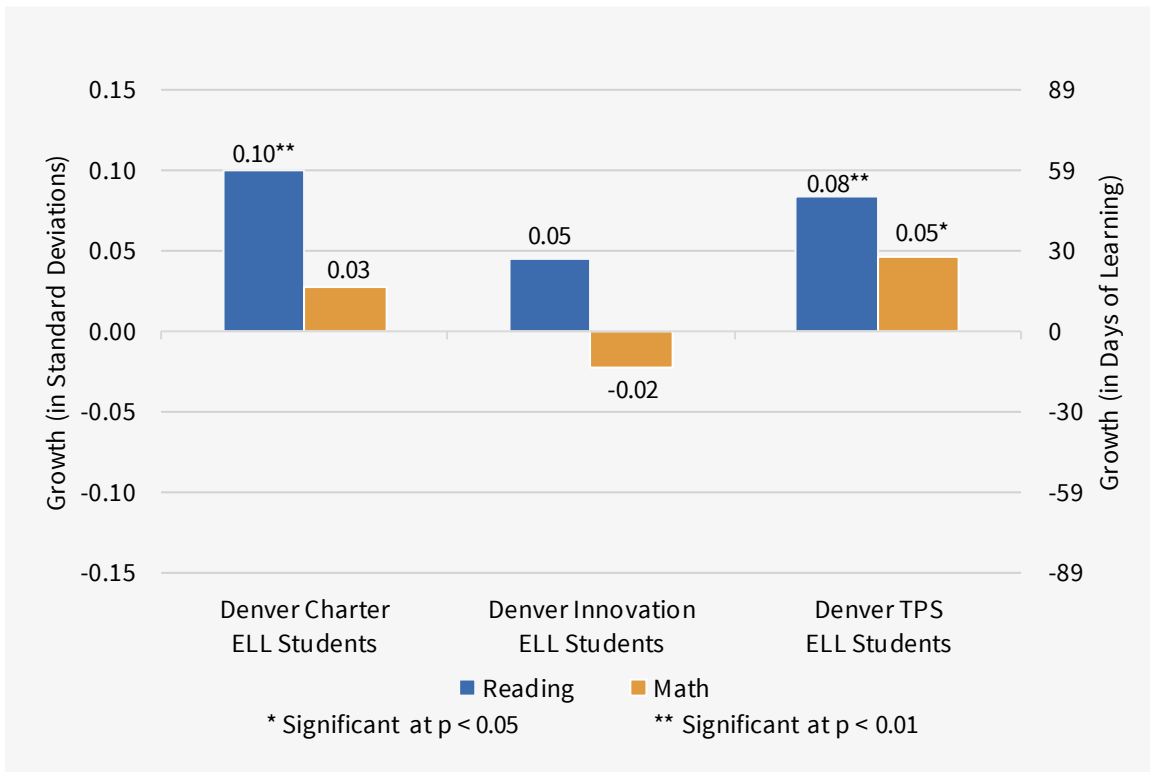- Poverty Status
- ELL Status
- Special Ed. Status

Gender Analysis
- Female Students
- Male Students

The 0.00 line represents the average learning gains of students in poverty in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

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Subgroup Analyses:
English Language Learner Status Analysis

Learning Gains for All ELL Students in Denver Compared to the Average Learning Gains of ELL Students Statewide, by Subject

Growth (in Standard Deviations)

- 0.15 — 89
- 0.10 — 59
- 0.05 — 30
- 0.00 — 0
- -0.05 — -30
- -0.10 — -59
- -0.15 — -89

Growth (in Days of Learning)

0.08**

0.03

■ Reading   ■ Math

* Significant at p < 0.05   ** Significant at p < 0.01

The 0.00 line represents the average learning gains of ELL students in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

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Subgroup Analyses:
English Language Learner Status by Sector

Learning Gains for ELL Students in Denver Charter Schools, ELL Students in Denver Innovation Schools, and ELL Students in Denver TPS Compared to the Average Learning Gains of ELL Students Statewide, by Subject

* Growth significantly stronger than that of TPS

* Growth significantly weaker than that of TPS

* Significant at p < 0.05   ** Significant at p < 0.01

The 0.00 line represents the average learning gains of ELL students in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

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Subgroup Analyses:
Special Education Status Analysis

Special Ed. by Sector

Learning Gains for All Denver Students in Special Education Compared to the Average Learning Gains of Students in Special Education Statewide, by Subject

Roadmap for Graphs

Overall Denver

Sector Analysis
- Charter Network
- School-Level

Race Analysis
- Black Students
- Hispanic Students

Subgroup Analysis
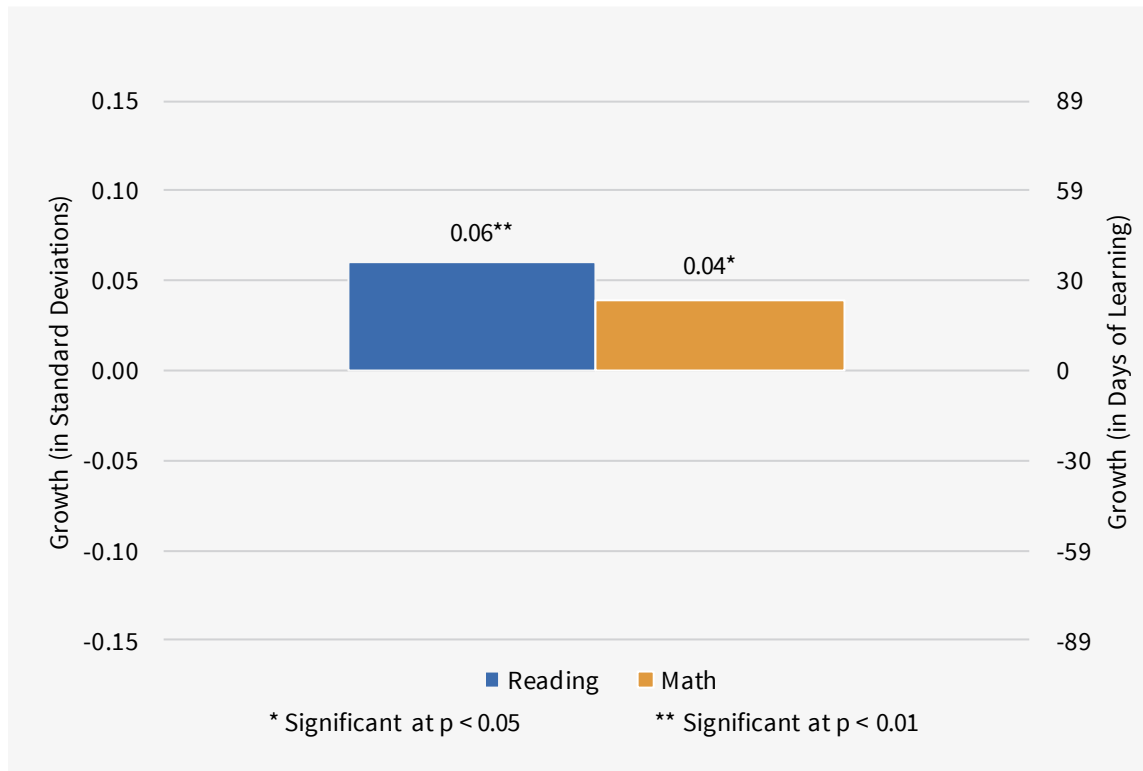- Poverty Status
- ELL Status
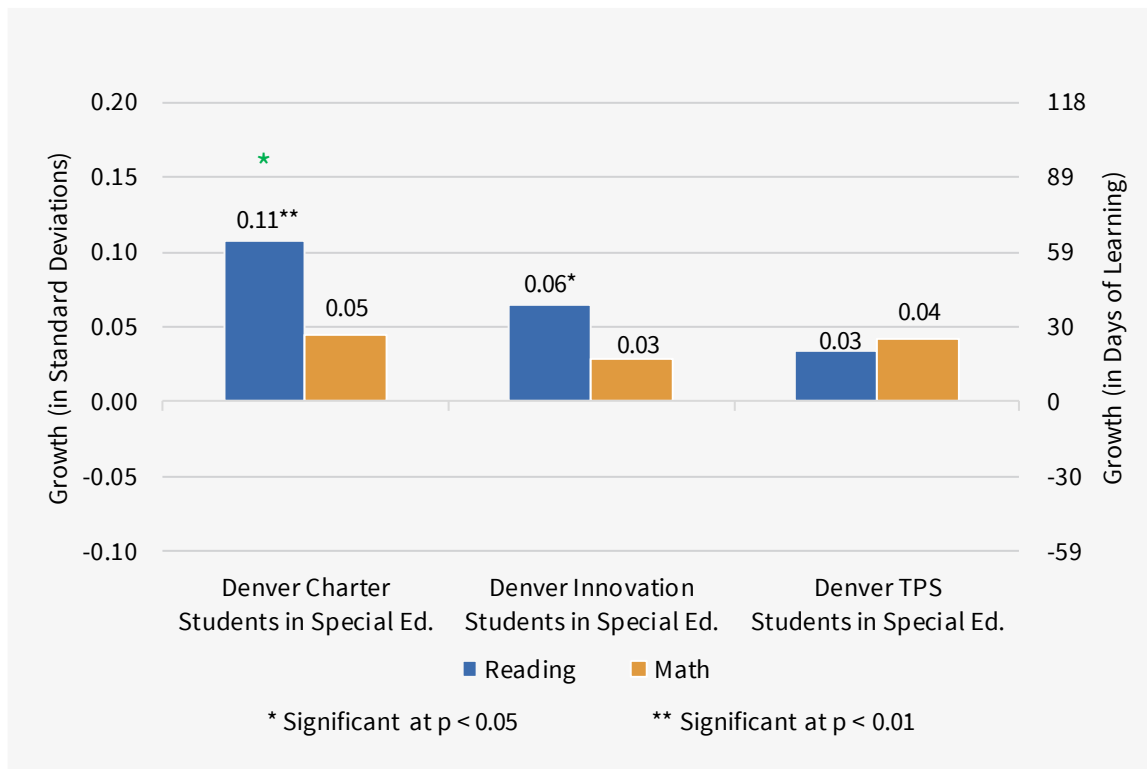- Special Ed. Status

Gender Analysis
- Female Students
- Male Students

Growth (in Standard Deviations)

Growth (in Days of Learning)

0.06**

0.04*

■ Reading ■ Math

* Significant at p < 0.05   ** Significant at p < 0.01

The 0.00 line represents the average learning gains of students in Special Ed. in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

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Subgroup Analyses:
Special Education Status by Sector

Learning Gains for Denver Charter School Students in Special Ed., Denver Innovation School Students in Special Ed., and Denver TPS Students in Special Ed. Compared to the Average Learning Gains of Students in Special Ed. Statewide, by Subject

* Growth significantly stronger than that of TPS

* Growth significantly weaker than that of TPS

* Significant at p < 0.05   ** Significant at p < 0.01

The 0.00 line represents the average learning gains of students in Special Ed. in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

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Gender Analysis

Click the buttons below for graphs showing the performance of female students in Denver or male students in Denver relative to statewide average learning gains for the same gender.

Female Students

Male Students

Roadmap for Graphs

Overall Denver

Sector Analysis
- Charter Network
- School-Level

Race Analysis
- Black Students
- Hispanic Students

Subgroup Analysis
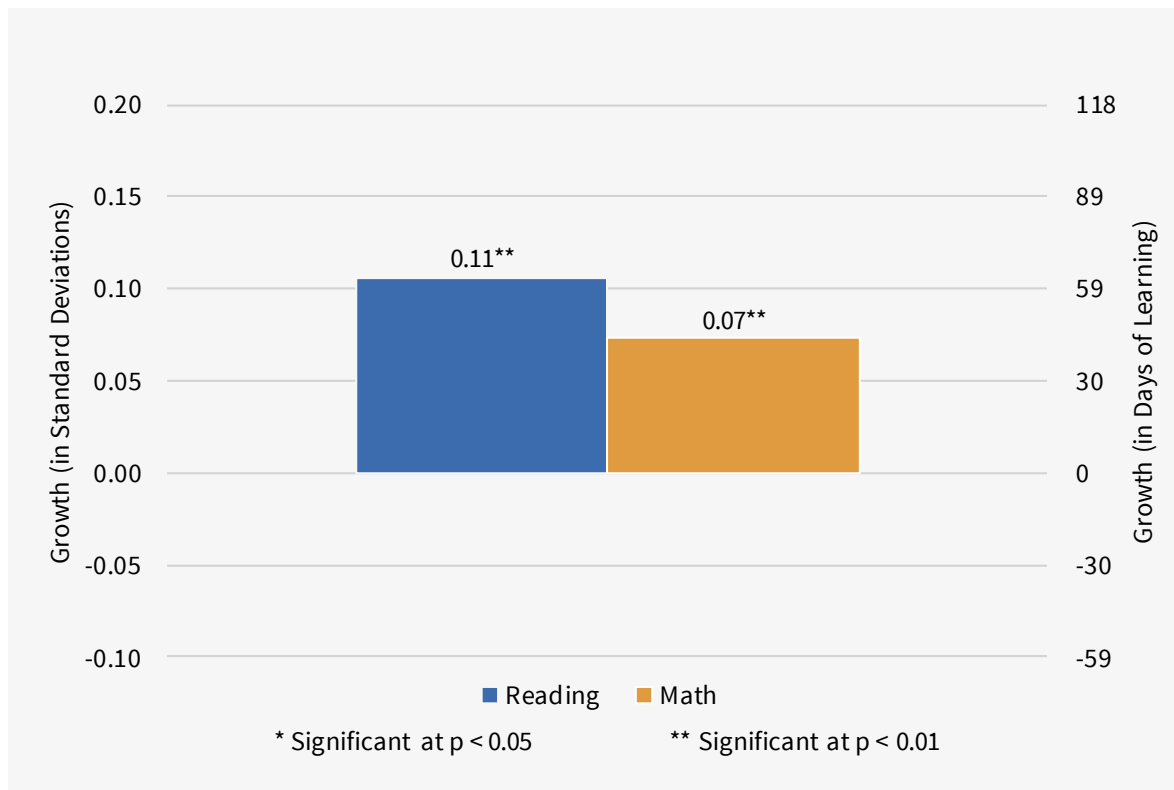- Poverty Status
- ELL Status
- Special Ed. Status

Gender Analysis
- Female Students
- Male Students

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Gender Analysis: Female Students

Learning Gains for All Denver Female Students Compared to the Average Learning Gains of Female Students Statewide, by Subject

Female Students by Sector

* Significant at p < 0.05   ** Significant at p < 0.01

Roadmap for Graphs

Overall Denver

Sector Analysis
- Charter Network
- School-Level

Race Analysis
- Black Students
- Hispanic Students

Subgroup Analysis
- Poverty Status
- ELL Status
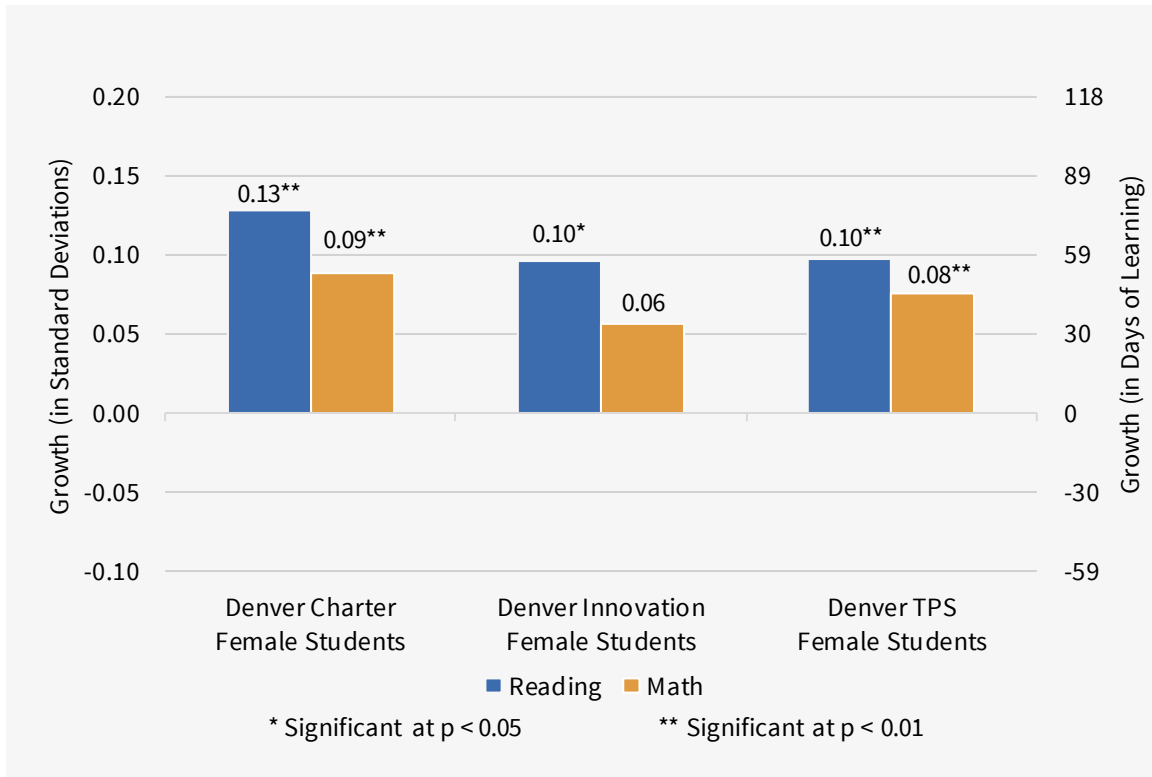- Special Ed. Status

Gender Analysis
- Female Students
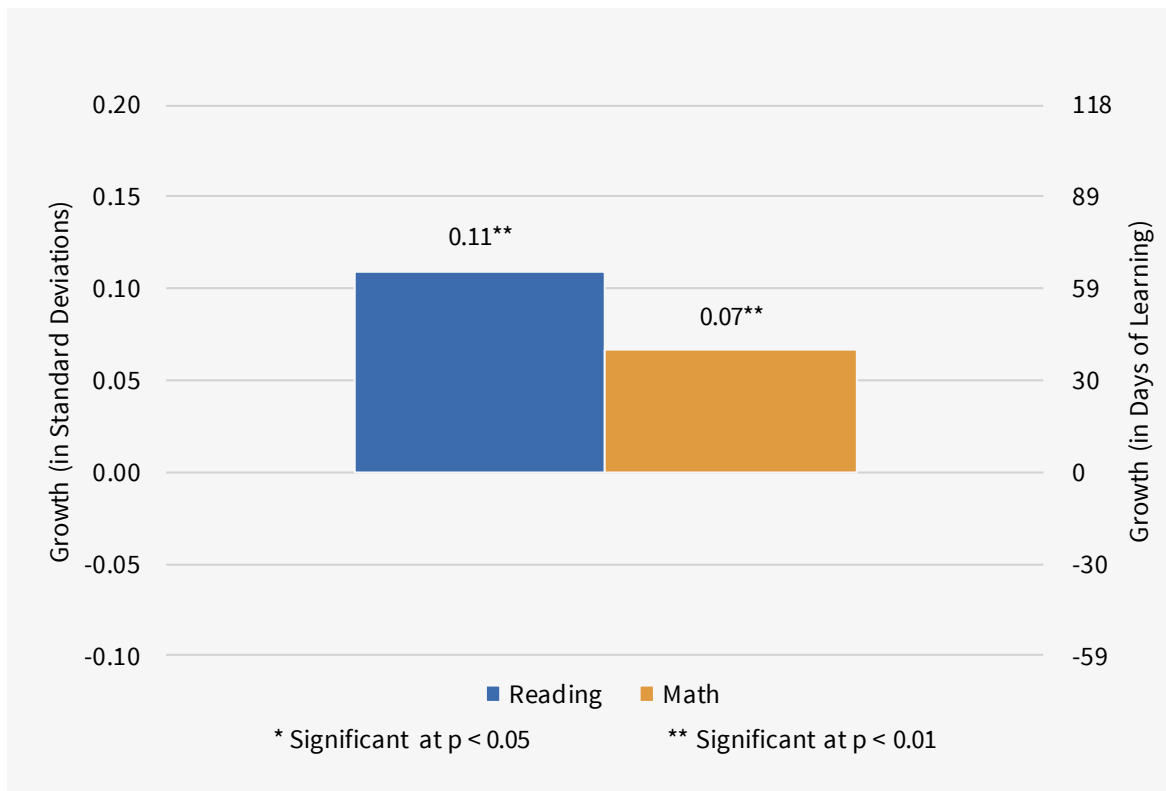- Male Students

The 0.00 line represents the average learning gains of female students in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

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Gender Analysis: Female Students by Sector

Learning Gains for Female Charter School Students, Female Innovation School Students, and Female TPS Students in Denver Compared to the Average Learning Gains of Female Students Statewide, by Subject

* Growth significantly stronger than that of TPS

* Growth significantly weaker than that of TPS

* Significant at p < 0.05   ** Significant at p < 0.01

The 0.00 line represents the average learning gains of female students in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

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Gender Analysis: Male Students

Learning Gains for All Denver Male Students Compared to the Average Learning Gains of Male Students Statewide, by Subject

The 0.00 line represents the average learning gains of male students in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

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Gender Analysis:
Male Students by Sector

Learning Gains for Male Charter School Students, Male Innovation School Students, and Male TPS Students in Denver compared to the Average Learning Gains of Male Students Statewide, by Subject

* Growth significantly stronger than that of TPS

* Growth significantly weaker than that of TPS

Reading ■ Math

* Significant at p < 0.05   ** Significant at p < 0.01

The 0.00 line represents the average learning gains of male students in the entire state. These results capture one-year academic growth for the period ending in Spring 2017.

Roadmap for Graphs

Overall Denver

Sector Analysis
- Charter Network
- School-Level

Race Analysis
- Black Students
- Hispanic Students

Subgroup Analysis
- Poverty Status
- ELL Status
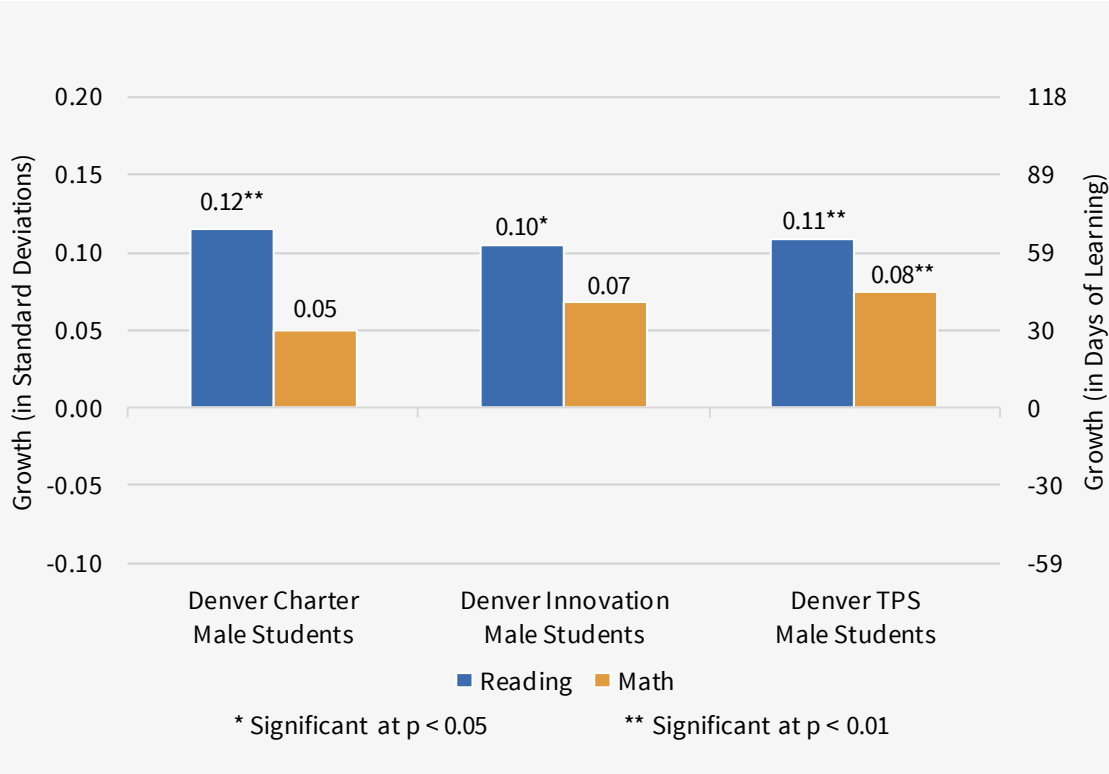- Special Ed. Status

Gender Analysis
- Female Students
- Male Students

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Summary of Findings

The summary of the findings from the analysis of Denver schools is presented <u>here</u>.

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