

# Competency Determination Overview and Impact

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# Agenda

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- Summary
- CD Value
- CD Graduation Impact

The CD Value section is from analysis completed by Professor John Papay and presented to the DESE Board at the April 2022 meeting and from additional analysis recently provided. Professor Papay is Associate Professor of Education and Economics at Brown University and is Director of the Annenberg Institute.

The CD Graduation Impact analysis is from data provided by DESE Associate Commissioner Rob Curtin.

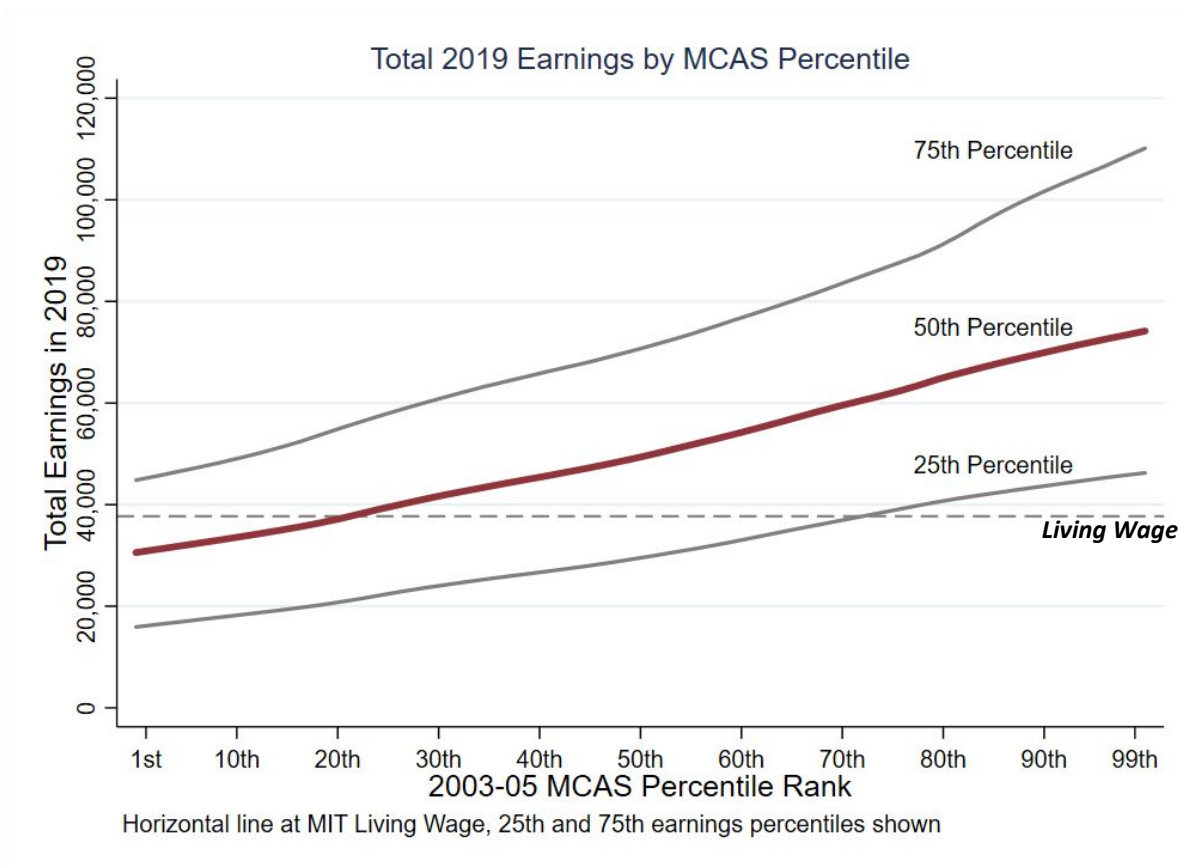
# Summary

**MCAS and the CD have substantial value in predicting certain key life outcomes for students in all student groups, while helping policy-makers and educators prioritize areas of needs**

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- **CD scores are on average predictive of certain important life outcomes**
- **Of approximately 70,000 students in the statewide graduating class**
  - **96% earn the CD**
  - **3% don't earn the CD and also don't meet local district graduation requirements**
  - **1% don't earn the CD and meet local district graduation requirements**
- **Most students pass on their 1st attempt (usually Grade 10), and almost all pass on the 2nd or 3rd attempt (usually Grade 11)**
- **A significant number of Grade 12 dropouts have passed the CD**
- **A relatively small number of districts have a disproportionate number of total MA students not earning the CD (both those who meet and don't meet local graduation requirements)**
- **MA is the only 1 of the 49 states (including D.C.) whose only comprehensive statewide graduation requirement is passing a common assessment (the CD)**

## Grade 10 MCAS scores help predict future earnings

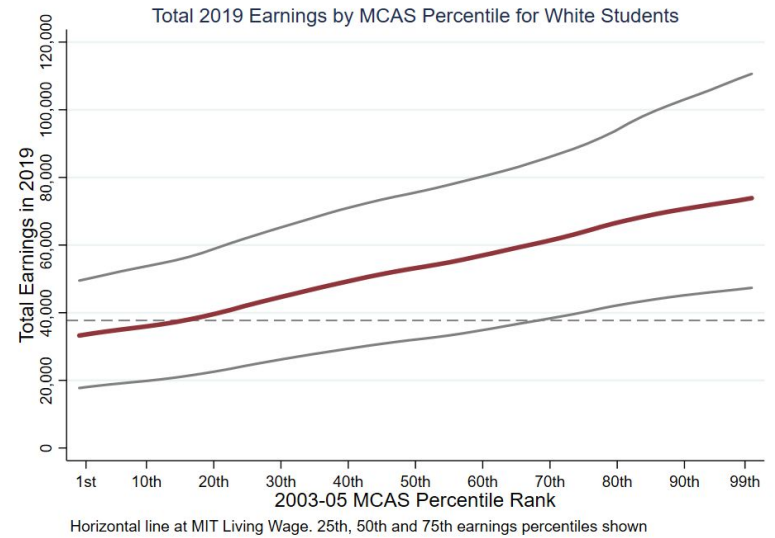
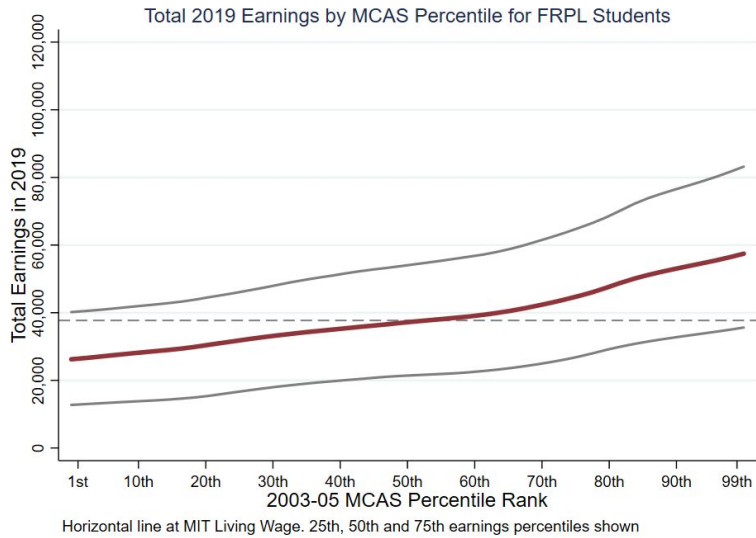
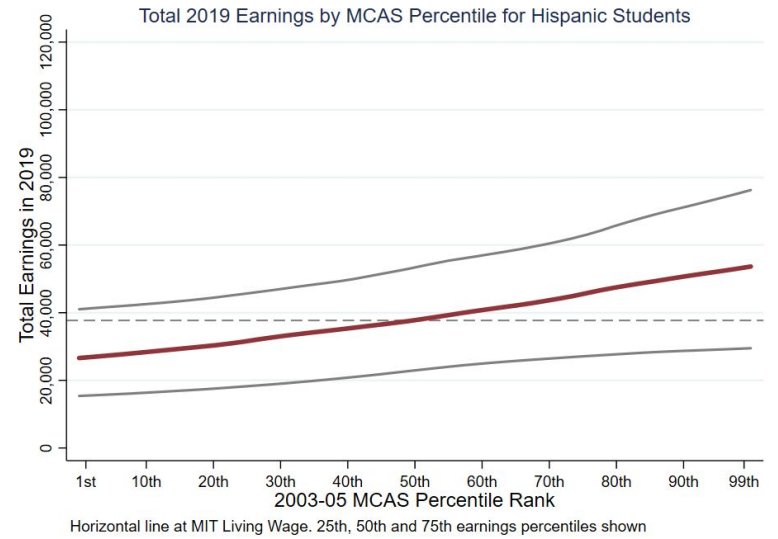
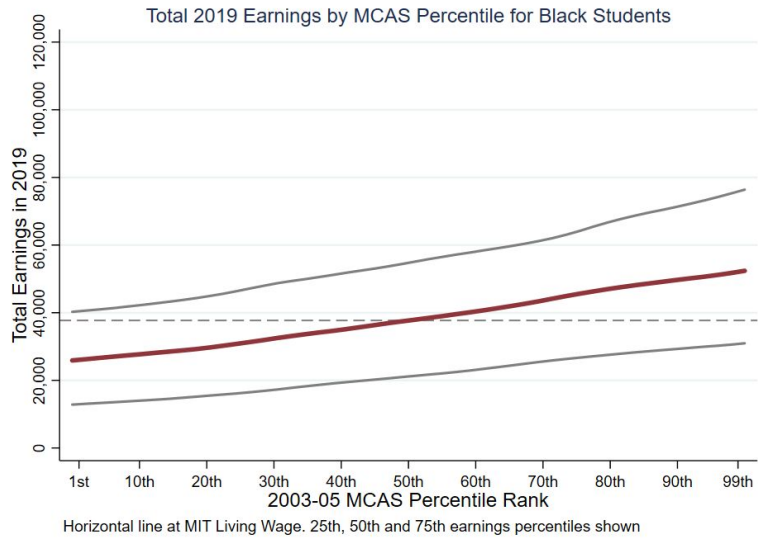


- We look at median annual earnings ~ age 30 for students at each MCAS score
- Students with higher MCAS scores go on to earn substantially more in the labor market.
- There is substantial variation in earnings at each MCAS score point (MCAS scores explain about 13% of the variation in earnings).

NOTE: We only observe in-state earnings reported to the UI system. This excludes self-employed individuals or those who work for the federal government or military. Living Wage from MIT estimates for two working parents with two children.

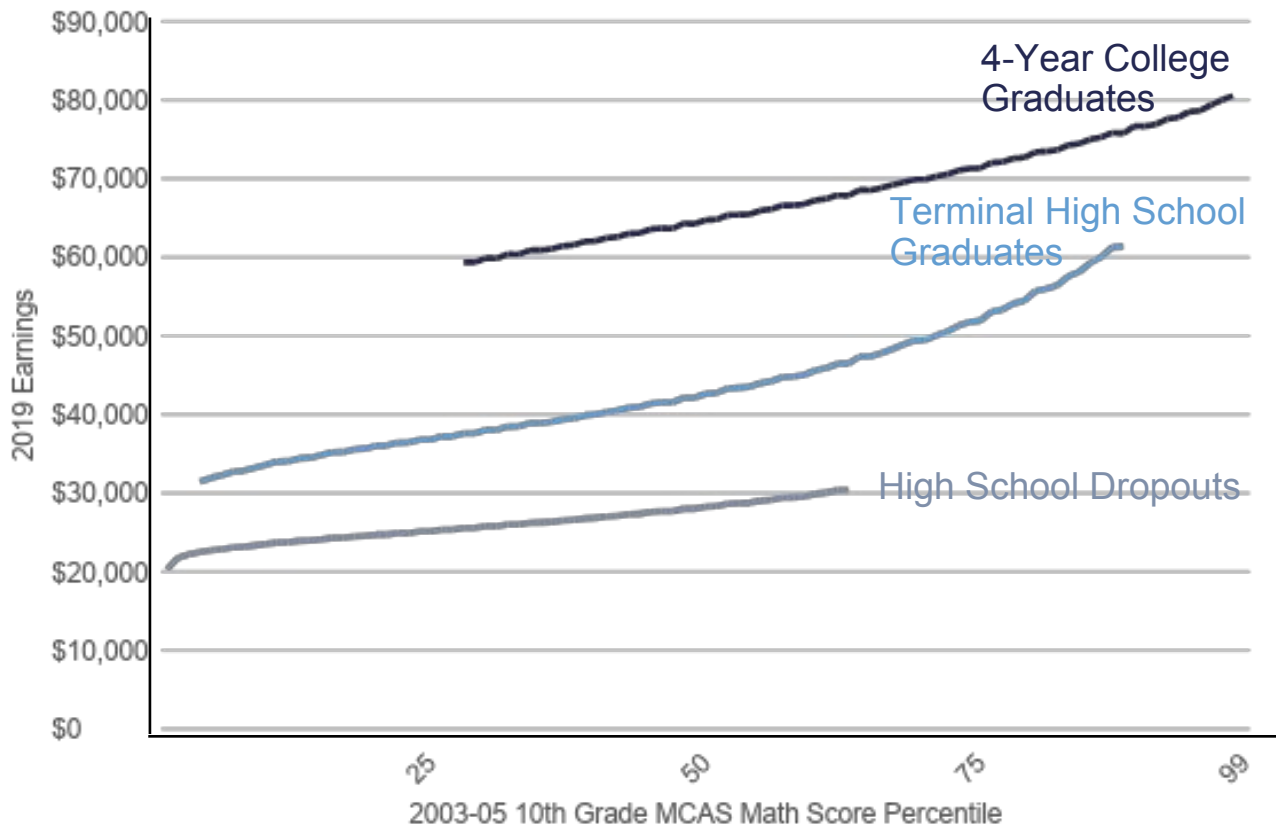
# CD Value

## This relationship exists across different student groups



# Grade 10 MCAS scores help predict earnings among similar students with the same education level and demographics

Estimated average 2019 earnings by MCAS math percentile and educational attainment for demographically similar students who attended the same high school

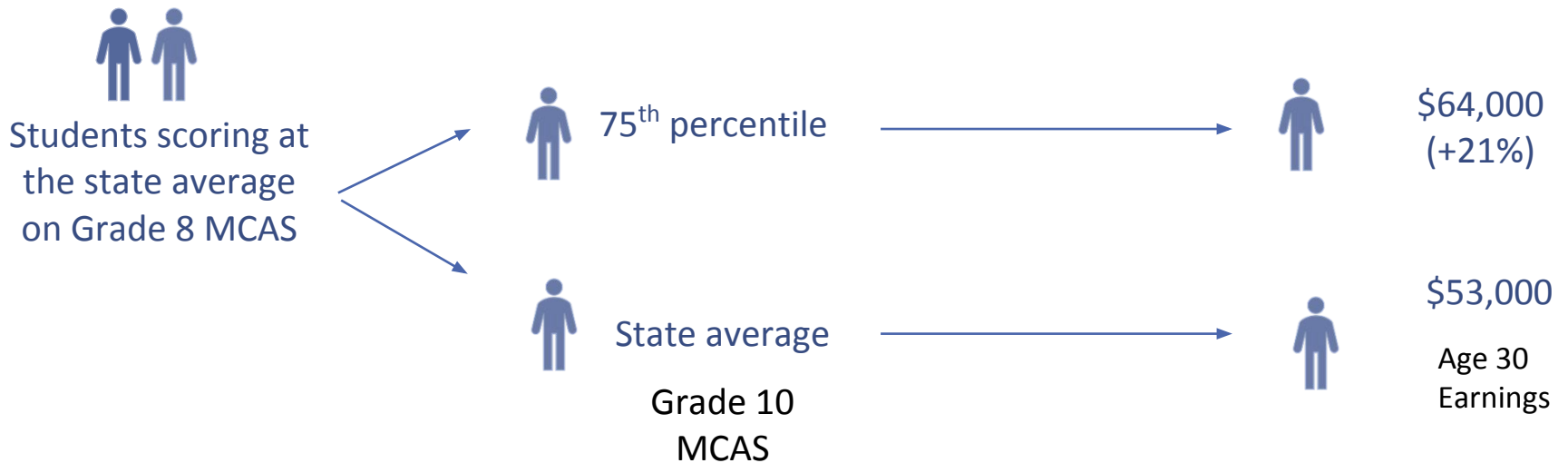


- We compare students with similar demographics from the same high school.
- Among students with the same education level, students with higher MCAS scores have higher earnings.
- We also see large returns to educational attainments (particularly four-year college degrees) for students at the same MCAS score level.

## CD Value

When comparing students with similar Grade 8 scores and similar demographic characteristics who attend the same high school, those with higher Grade 10 scores have better future incomes

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## CD Value

The same relationship can be seen among different student groups

Student Group	Increase in Age 30 Earnings for students whose Grade 8 MCAS score was at the mean and increased in Grade 10 to the 75 <sup>th</sup> percentile	
	Percentage (%)	Dollar Earnings (\$)
Black	15.5%	\$61,215
Hispanic	15.9%	\$61,427
Asian	24.3%	\$65,879
White	19.4%	\$63,282
ED	16.3%	\$61,639
EL	6.3%	\$56,339
IEP	10.5%	\$58,565

10<sup>th</sup> Grade Mean: \$53,000

## The likelihood of enrolling and/or graduating increases significantly at even modest increases above the cutoff...

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Educational attainments for 2011 Math test-takers

	Pass/Fail	Proficient/ Needs Improvement	Meets/Partially Meets	State Avg.
HS Graduation	79%	89%	93%	91%
Any College Enroll	46%	61%	74%	75%
4-yr College Enroll	11%	28%	49%	55%
Any College Grad	12%	24%	40%	48%
4-yr College Grad	5%	18%	33%	43%

NOTE: We measure HS graduation within 3 years of taking the 10<sup>th</sup> grade test, college attendance within 4 years, and college graduation within 7 years.

## CD Value

...and that relationship exists among different student groups

Student Group	Pass/Fail	Proficient/Needs Improvement	Meets/Partially Meets	State Average
<b>Black Students</b>				
HS Graduation	66%	77%	88%	86%
Any College Enrollment	43%	59%	65%	70%
<b>Hispanic Students</b>				
HS Graduation	55%	76%	84%	81%
Any College Enrollment	33%	48%	59%	60%
<b>White Students</b>				
HS Graduation	83%	93%	95%	93%
Any College Enrollment	49%	67%	80%	78%
<b>ED Students</b>				
HS Graduation	58%	78%	87%	83%
Any College Enrollment	36%	45%	56%	60%

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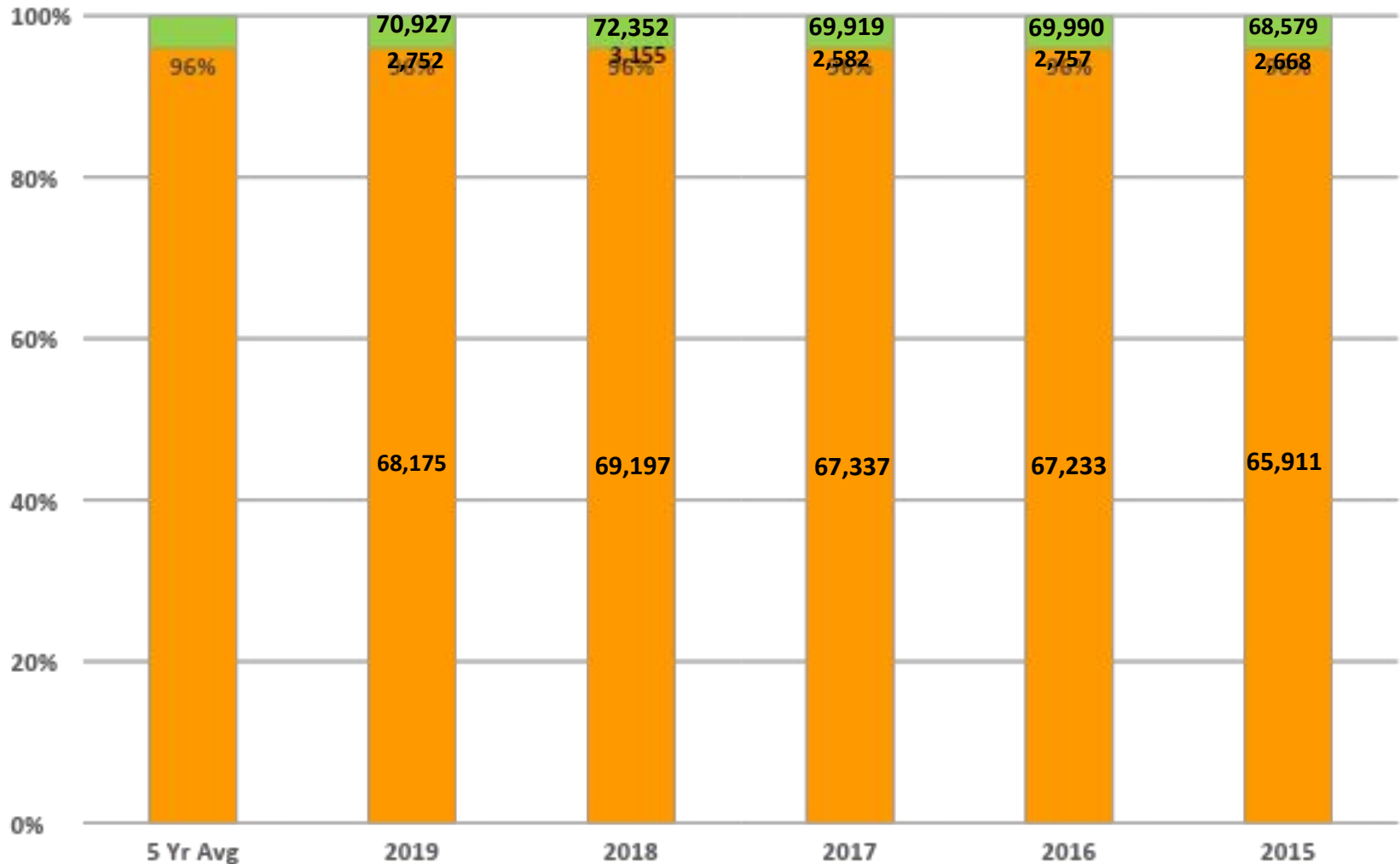
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The CD Graduation Impact analysis is from data provided by DESE Associate Commissioner Rob Curtin.

## CD Graduation Impact

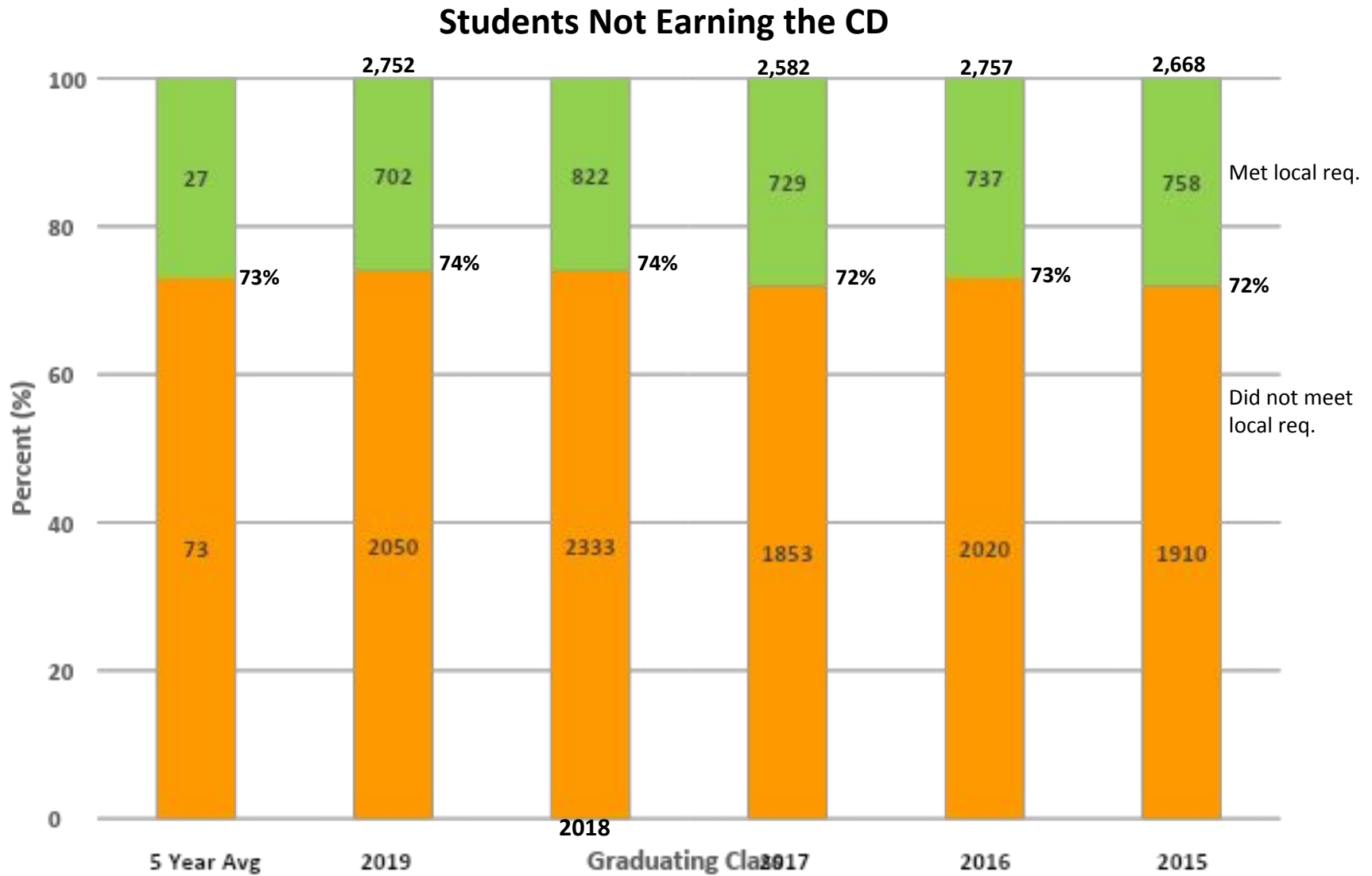
96% of the graduating class consistently both earned the CD and met local district graduation requirements

### Students Earning the CD



## CD Graduation Impact

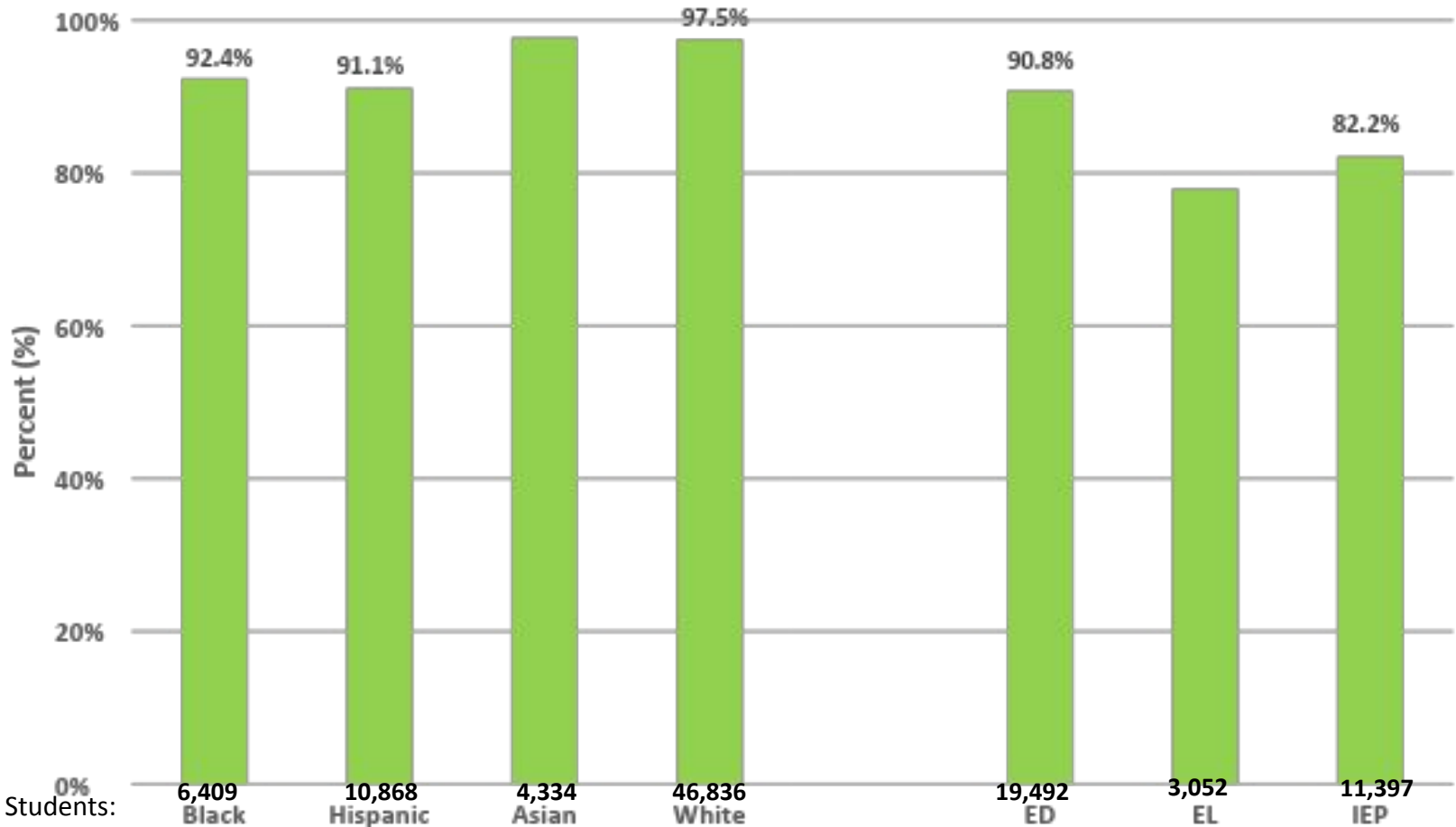
Of the 4% of the graduating class that did not earn the CD, approximately 3/4 did not meet local district requirements and would not have received a graduation diploma even without a CD requirement



## CD Graduation Impact

A high percent of each student group in the graduating class earns the CD

CD Attainment Rates for Student Groups (2015-2019 Graduating Class Avg)



## CD Graduation Impact

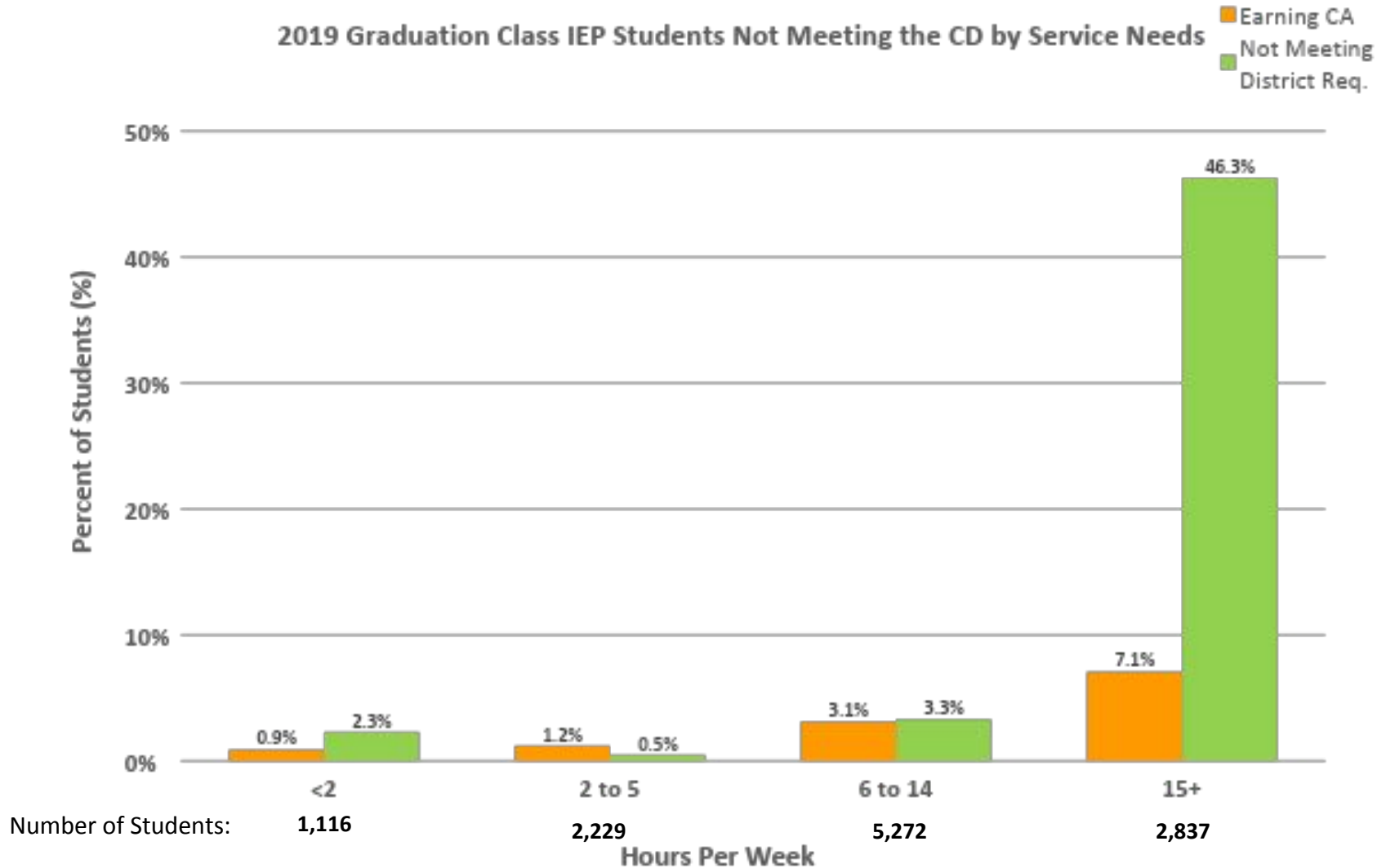
Within each student group, most students who do not earn the CD also do not meet local district graduation requirements

### Met Local Requirements (Certificate of Attainment) vs. Not Meeting Local Requirements



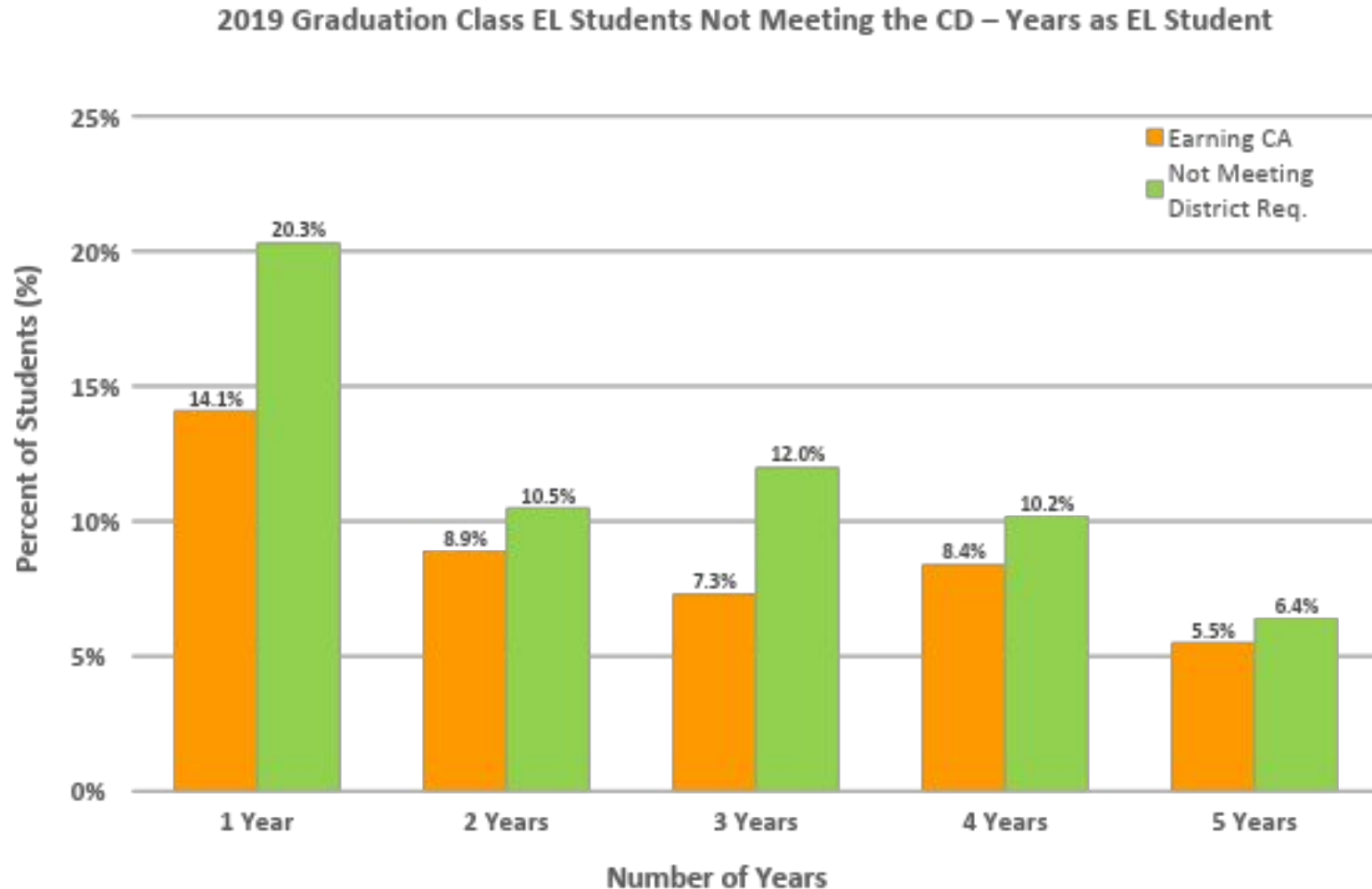
## CD Graduation Impact

Among students with IEPs, the percent of students not earning the CD is much higher for those with the most significant needs



## CD Graduation Impact

The percent of EL students with a CA declines with the number of years the student is considered EL, while a larger number are not meeting local district requirements



## CD Graduation Impact

Most Grade 12 dropouts have already earned the CD

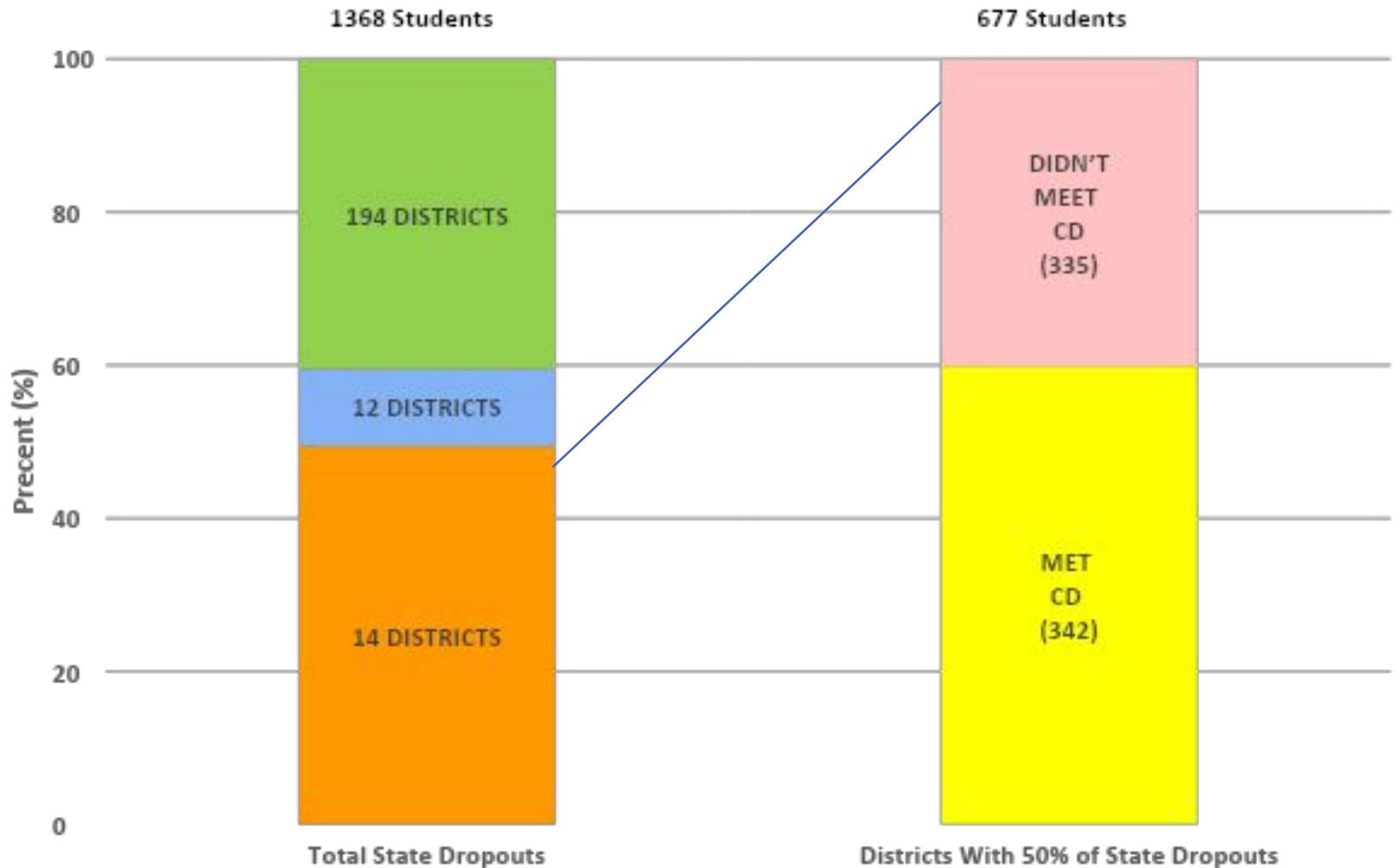
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### Grade 12 Dropouts

Year	# Dropouts			% of Dropouts	
	<u>w/ CD</u>	<u>w/o CD</u>		<u>w/ CD</u>	<u>w/o CD</u>
<b>2019</b>	847	521		62%	38%
<b>2018</b>	995	512		66%	34%
<b>2017</b>	862	363		70%	30%
<b>2016</b>	1,037	431		71%	29%
<b>2015</b>	975	381		72%	28%

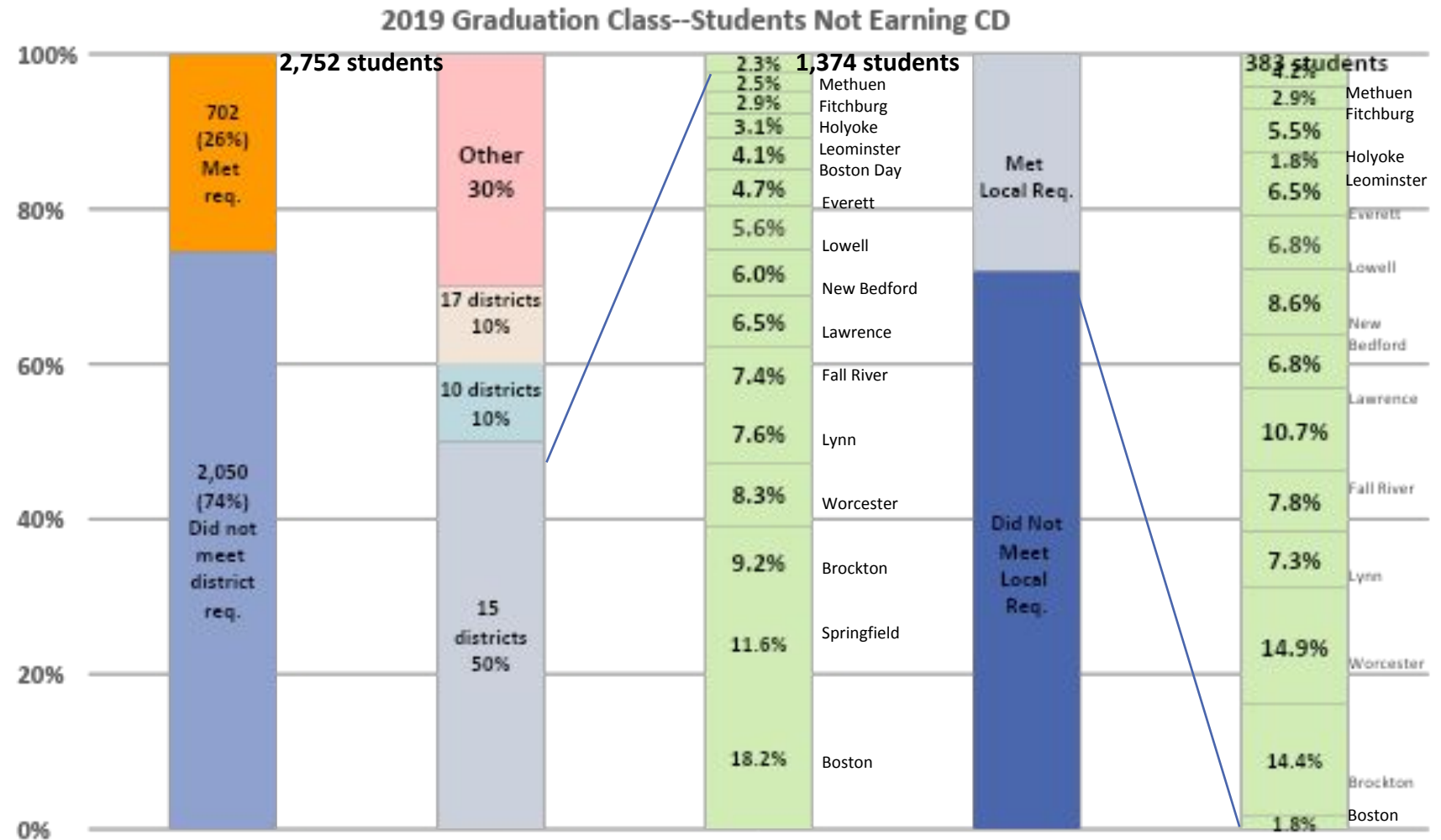
## CD Graduation Impact

14 districts account for 50% of 2019 Grade 12 dropouts, with 51% of dropouts in those 14 districts having met the CD



# CD Graduation Impact

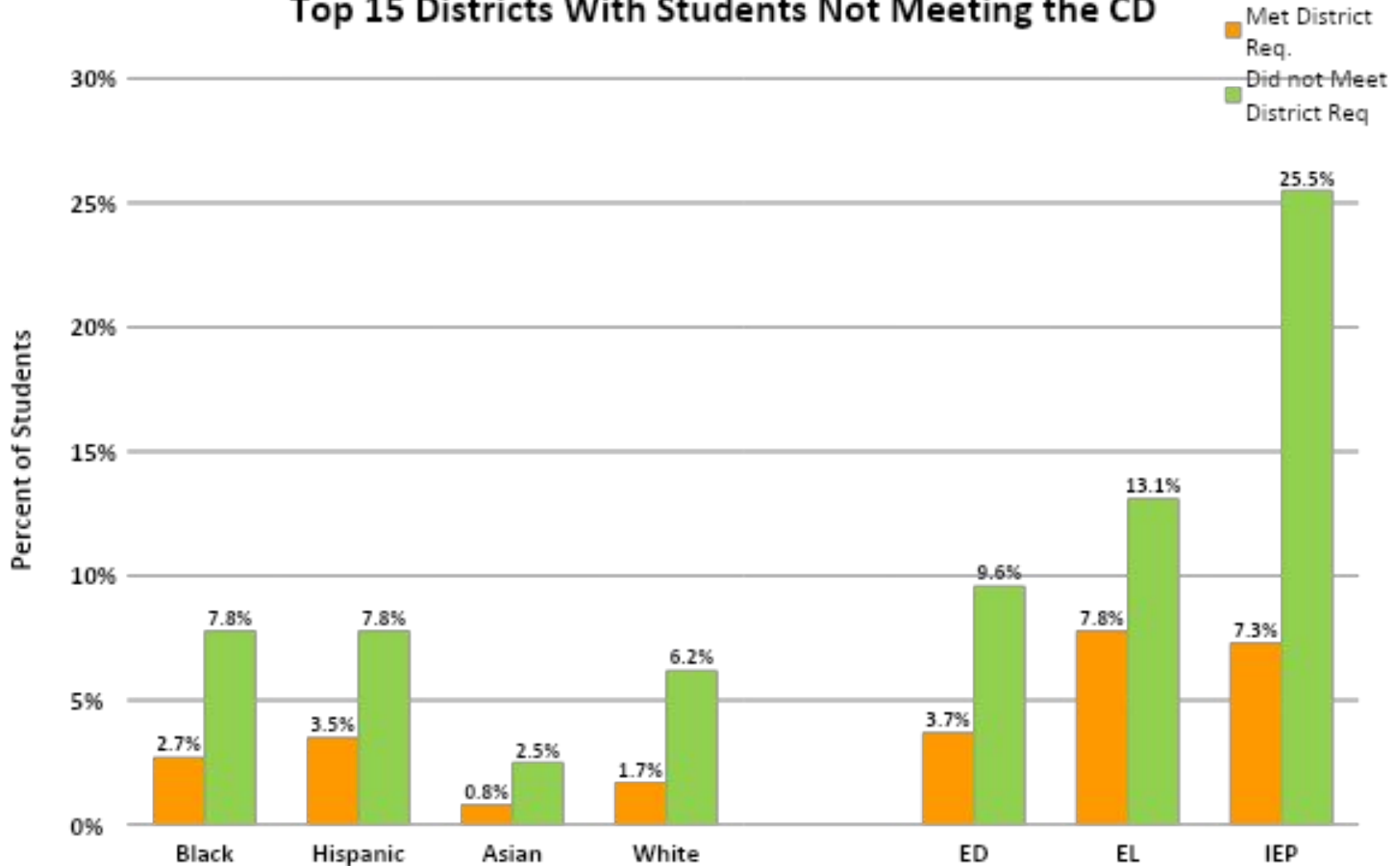
15 districts account for 50% of students not earning the CD, with 72% of those students not meeting district requirements. Of the 28% with a CA, more than 80% are in 9 districts



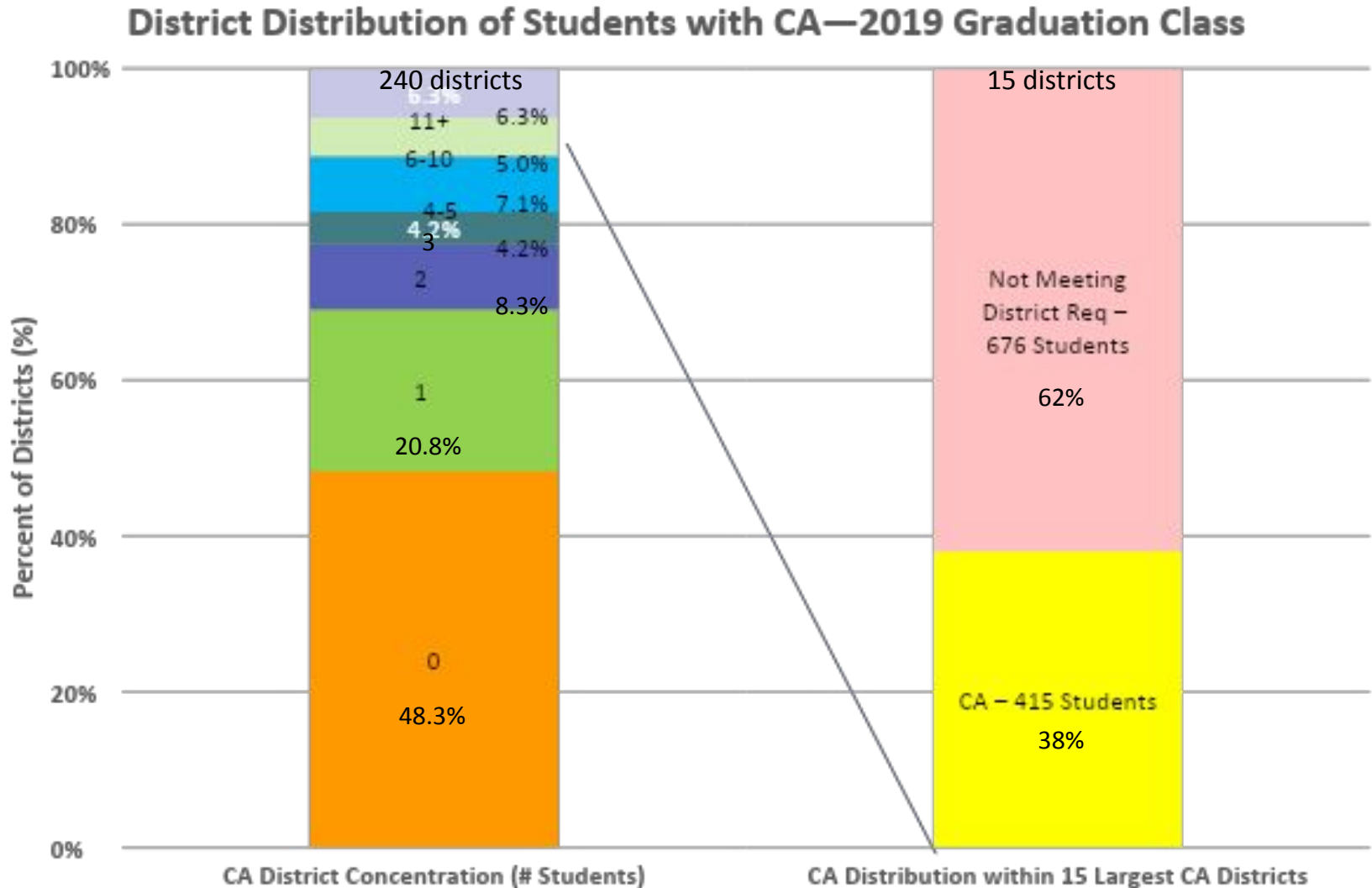
## CD Graduation Impact

There are some differences among student groups receiving CAs, with each group having a much higher percent not meeting district requirements

### Top 15 Districts With Students Not Meeting the CD



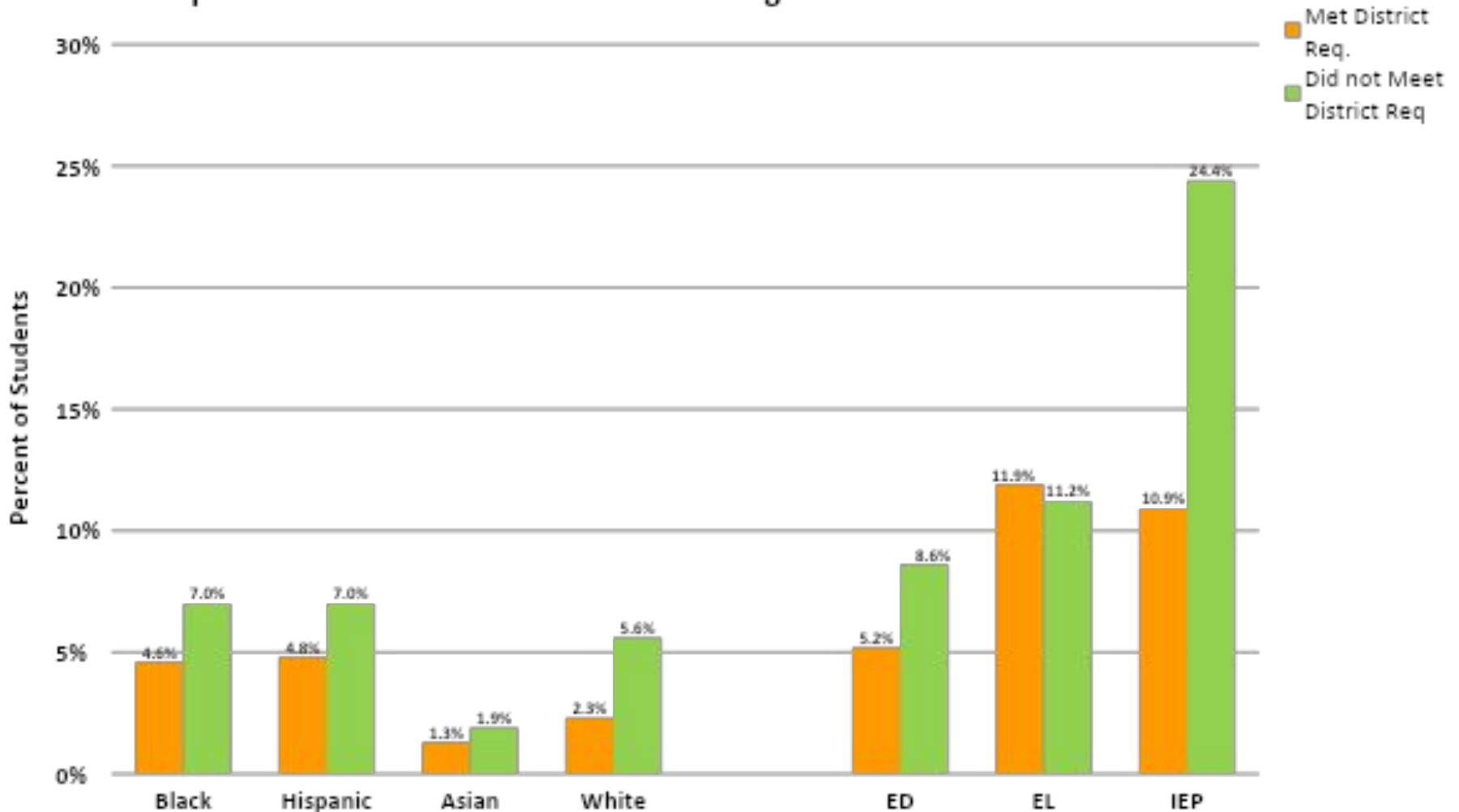
Most districts have few students with a CA. 15 districts have 11+ students with a CA, and in this group most students did not meet local requirements



## CD Graduation Impact

In the 15 largest CA districts, almost every student group has a much larger portion of students not meeting district requirements

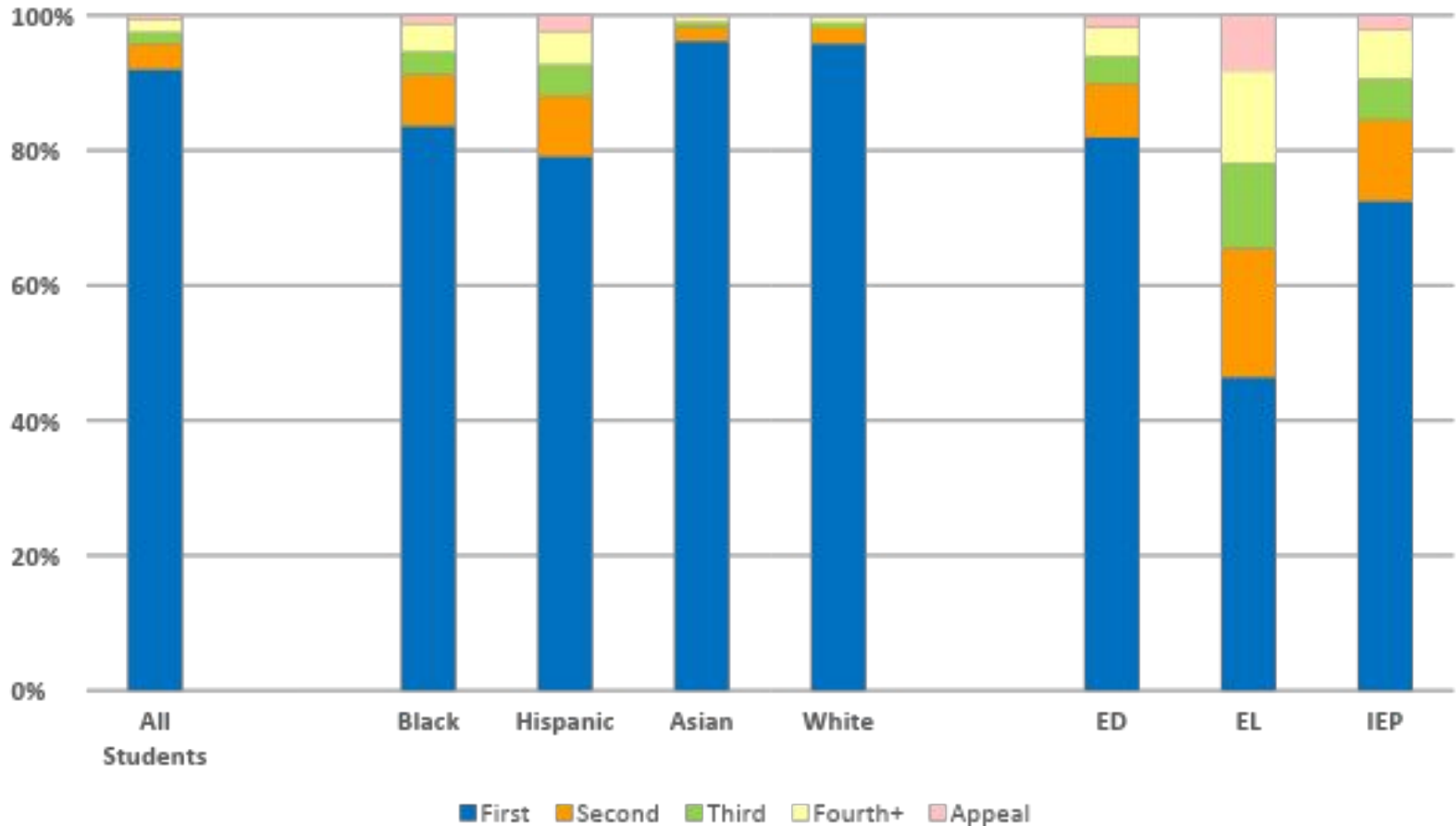
Top 15 Districts With Students Not Meeting the CD—2019 Graduation Class



## CD Graduation Impact

Most students who earn the CD do so on their first attempt (usually Grade 10), with almost all passing on their 2nd or 3rd attempt (usually Grade 11)

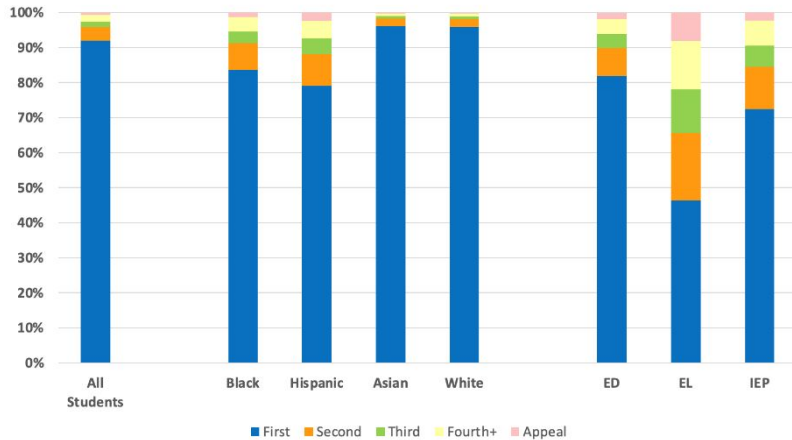
### Students Who Earn the CD by Attempt—2019 Graduation Class



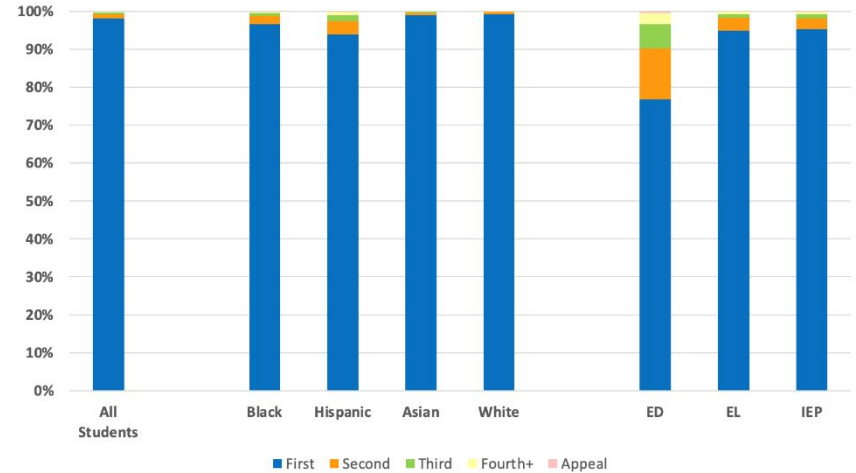
# CD Graduation Impact

## Each individual test has an even higher pass rate by attempt

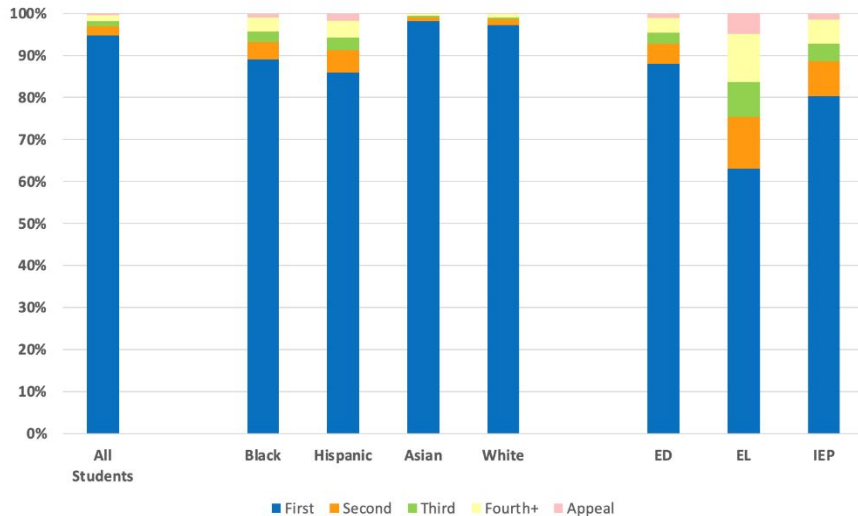
Students Who Earn the CD by Attempt—2019 Graduation Class



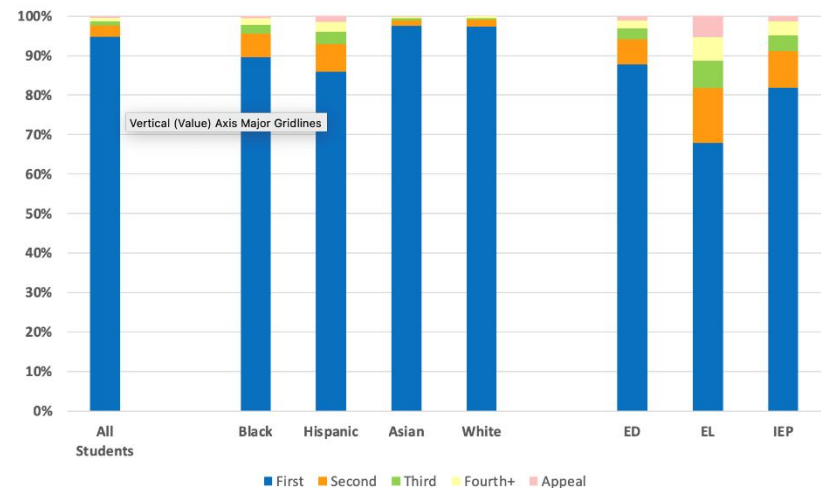
Students Who Meet the ELA CD Requirements by Attempt—2019 Graduation Class



Students Who Meet the Math CD Requirement by Attempt—2019 Graduation Class

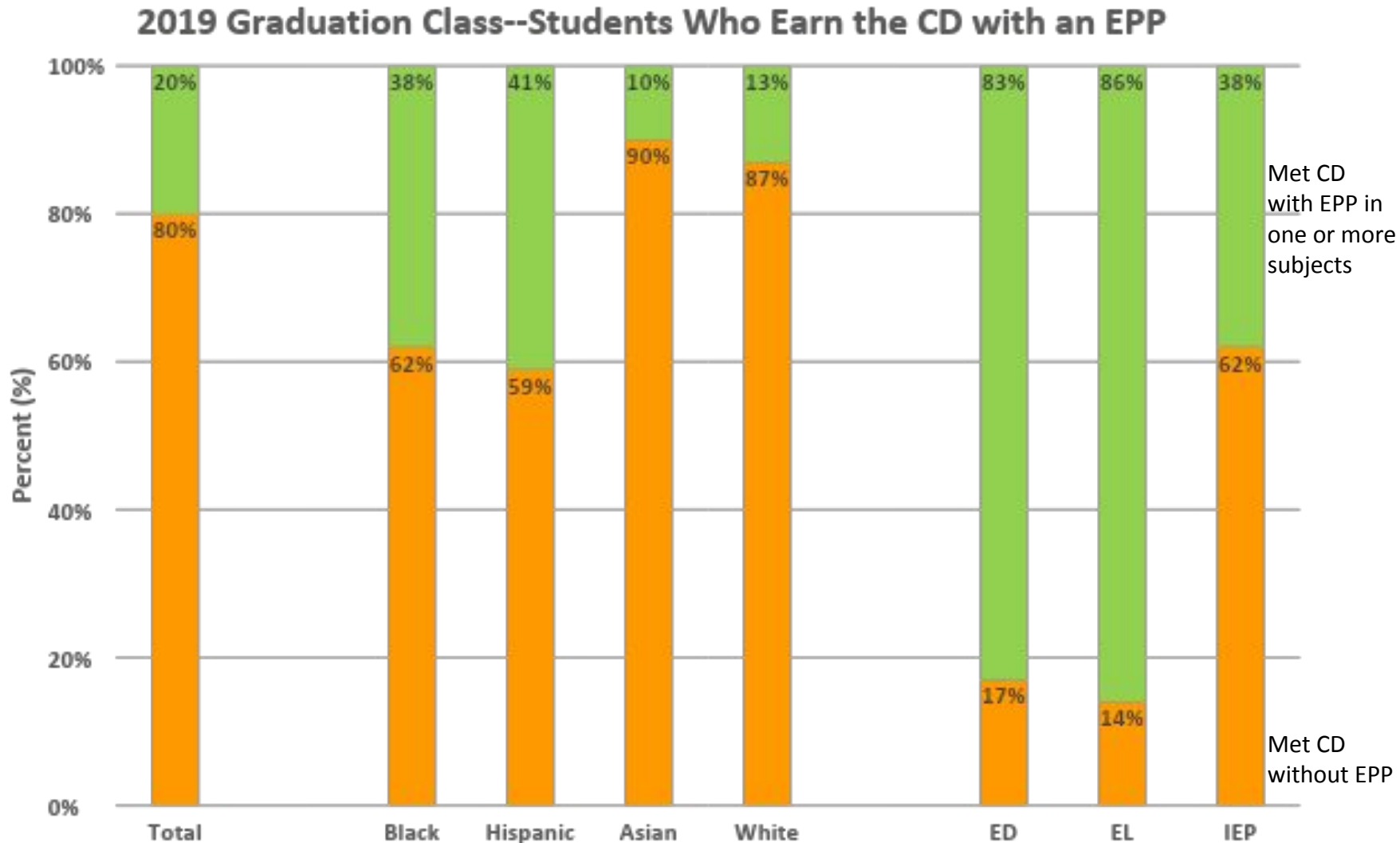


Students Who Meet the Science CD Requirement by Attempt—2019 Graduation Class

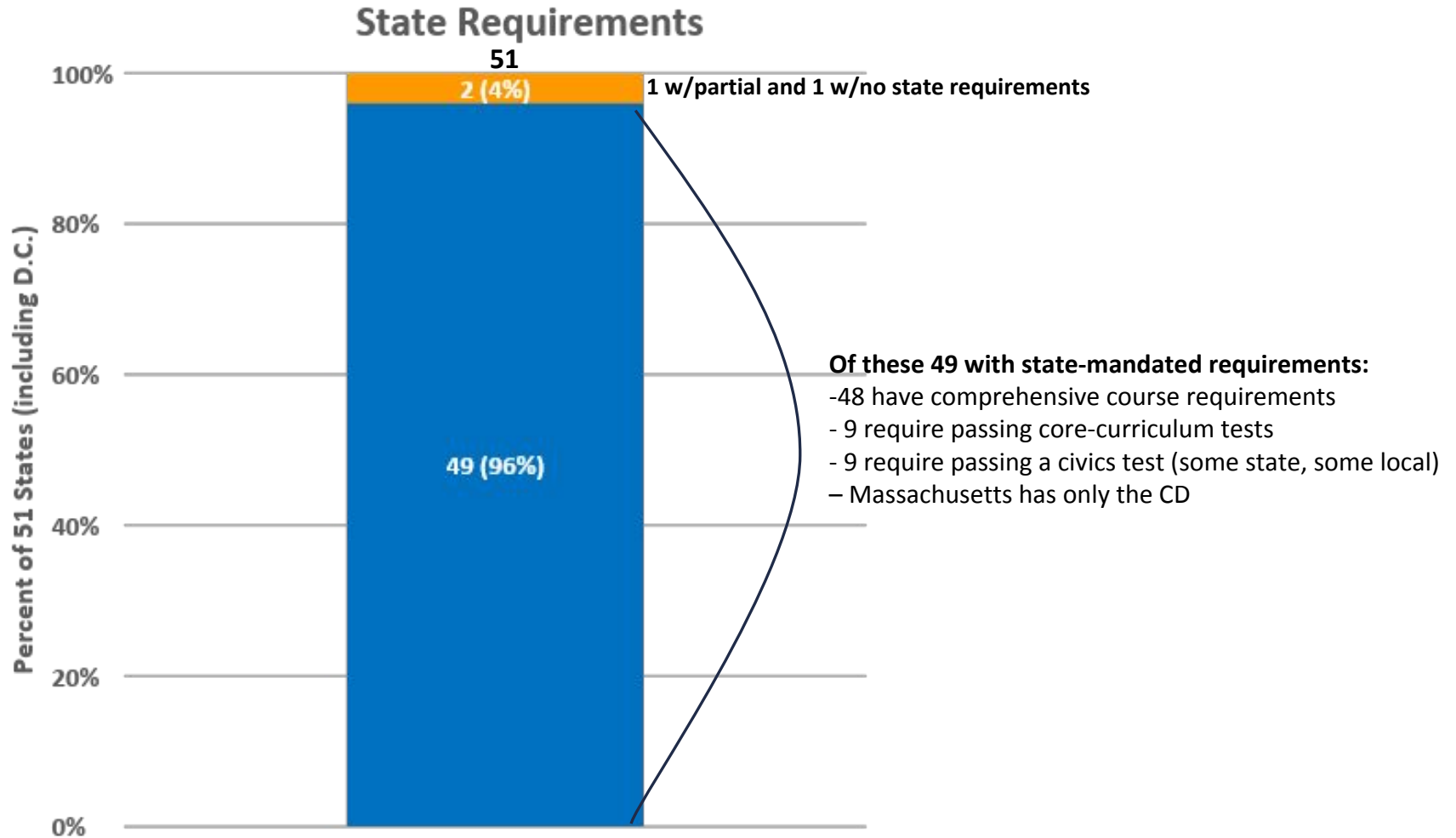


## CD Graduation Impact

Overall, 20% of the students who earn the CD do so with an EPP, with some groups being more dependent on the EPP



49 of 51 states (including D.C.) have state-mandated comprehensive graduation requirements. MA is the only state with just an assessment as the state requirement



# Summary

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