College and Career Readiness Exploratory and Long-Term Studies Updates

MARYLAND STATE BOARD OF EDUCATION | APRIL 25, 2023

OFFICE OF RESEARCH, PLANNING, AND PROGRAM EVALUATION

MARYLAND STATE DEPARTMENT OF EDUCATION
EQUITY AND EXCELLENCE

PRESENTATION OUTLINE

1. Background and Blueprint Requirements
2. Exploratory Study
3. Companion Analysis
4. Long-Term Study

1. **Background and Blueprint Requirements**
2. Exploratory Study
3. Companion Analysis
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Background and Blueprint Requirements

The Blueprint for Maryland's Future directs MSDE to utilize rigorous research studies to set the College and Career Readiness standard for students.

Blueprint for Maryland's Future: Requirements

The Blueprint calls for a clear definition of a college and career readiness standard and a system of assessments that ensure students are reaching their goals and receiving the support needed. The MSDE has commissioned two separate research studies to define and verify the CCR standard:

- **Exploratory Study**
  - MSDE partnered with the Maryland Assessment Research Center (MARC) at the University of Maryland to complete a short-term quantitative study to explore the relationship between high school state and national standardized tests, and other potential predictors of success measured in high school (such as course grades), and success in postsecondary coursework and/or workforce outcomes.
- **Long-Term Study**
  - MSDE awarded a contract to a research organization to perform a deep content analysis to determine the skills and knowledge necessary to succeed in the first year at a community college or 4-year college or university in Maryland.

Current CCR Interim Standard

The Blueprint requires a new **college and career readiness standard** that allows graduates to succeed in entry-level credit-bearing college courses. The goal is for all students to meet the standard by the end of their 10th grade year.

Current Blueprint Interim Standard Effective Now

A student meets the CCR Standard if they meet or exceed the standards in both English **and** Math:

English

English 10

- **Score 3 or 4** on Fall or Spring MCAP
- Score 4 or 5 on the PARCC
- Score 2 or 3 on early Fall 2021 MCAP

AND

Math

Algebra I, Algebra II, or Geometry

- **Score 3 or 4** on Fall or Spring MCAP
- Score 4 or 5 on the PARCC
- Score 2 or 3 on early Fall 2021 MCAP

Or a score of **520 on the Math SAT**

The Maryland State Board of Education adopted the interim standard on February 22, 2022

CCR Standards: Statutory Context

- Before the State Board can set an updated **long-term CCR Standard**, the **research study must first be completed.**
  - While the Long-Term study is being conducted, the **interim CCR standard** is used for **funding calculations**.
  - The **current agreements between LEAs and community colleges may still be used for community college course placement** during this period.

- **After the Long-Term research study is complete**, the State Board will adopt a CCR standard that "enables the **student to be successful in entry level credit bearing courses** or postsecondary education training at a State community college."
  - **At that point**, "Each **community college** and other open–enrollment public institution of higher education shall **accept for enrollment in credit–bearing courses** any individual who has **achieved college and career readiness** according to the standard adopted by the State Board."

MD Code, Education, §15-126; §7-205.1

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Exploratory Study

Summary of the quantitative study exploring the relationship between high school and postsecondary measures conducted by MARC.

Guiding Questions

1. To what extent are high school measures **related** to postsecondary success**?**
2. Which high school measures are the **best predictors** of success in postsecondary coursework?
3. How does **the use of multiple measures** predict success in postsecondary coursework?

Measures of College and Career Readiness

The exploratory study examined the relationship between high school measures and success in postsecondary coursework.

High School Measures

- Grade point average (GPA)*
  - Cumulative at the end of 10th and 12th grades
- College entrance exams
  - ACT
  - SAT
- State standardized tests
  - ELA 10
  - Algebra I

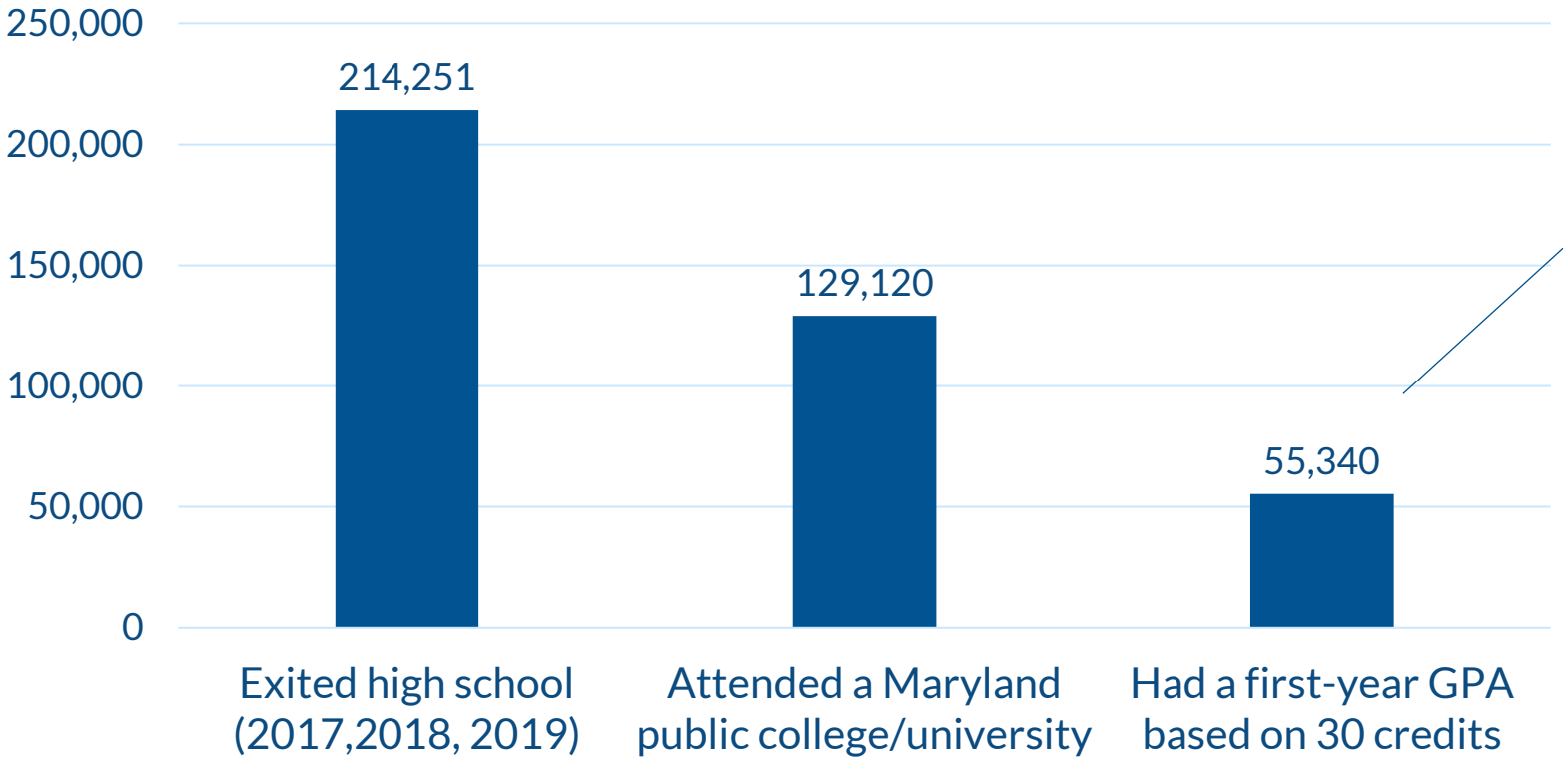
Postsecondary Success Metrics

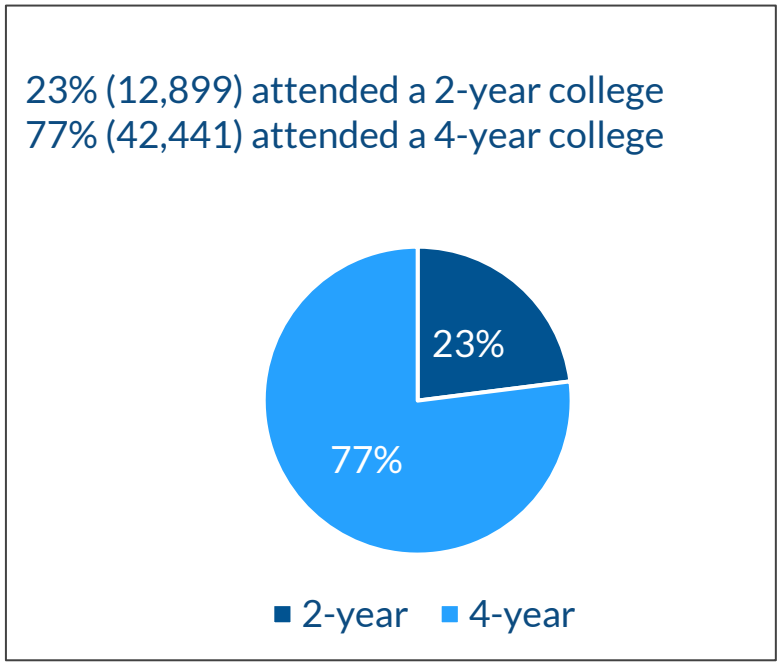
- First year college GPA, based on the first 30 credits earned, on a scale from 0 to 4, weighted by course credits
- Postsecondary success, defined as a first-year college GPA of 3.0 or above

* GPA of ELA, math, and science courses, weighted by course credits earned.

Study Population

The exploratory study examined students who exited Maryland public schools in 2017-2019 and earned 30 credits in a Maryland public college/university.





Study Sample: Student Characteristics

On average, **college enrollees are more likely** than high school exiters **to be Asian or white**, and **less likely to be English learners, Students with Disabilities, or students eligible for free meals.**

	All High School Exiters, 2017-2019	Two-Year College Students	Four-Year College Students
Number of Students	214,251	12,899	42,441
Male	51.4%	44.5% ↓	43.3% ↓
White	39.0%	48.3% ↑	44.6% ↑
Asian	6.2%	9.1% ↑	14.2% ↑
Black/African-American	34.3%	21.0% ↓	28.1% ↓
Hispanic/Latino	16.1%	16.8% ↑	8.6% ↓
FARMs	33.4%	27.0% ↓	19.0% ↓
English learners	6.2%	1.8% ↓	0.4% ↓
Students with Disabilities	9.7%	5.6% ↓	1.7% ↓

FARMs are students eligible for free and reduced priced meals.

↑ Up arrow indicates the **percentage is higher** than all high school exiters.

↓ Down arrow indicates the **percentage is lower** than all high school exiters.

Overview of Study Results

- **High school GPA and the state ELA assessment are the strongest predictors of first-year college GPA.**
  - For two-year college students, **high school GPA** and the **state standardized test in ELA** are **stronger** predictors of first-year college GPA than either college entrance exams or the Algebra I state standardized test.
  - For four-year college students, **high school GPA**, the **state standardized test in ELA**, and **college entrance exams** are **similarly strong predictors** of first-year college GPA.
- **High school GPA is slightly more precise in predicting first-year college GPA.**
  - **High school GPA more accurately predicted postsecondary success** than state tests or college entrance exams.
- Multiple measures would **increase the number of students identified as CCR.**
  - **Allowing for an option to meet a CCR standard through either GPA or through assessments increases the number of students meeting the standard** while the average first-year college GPA for those students **still exceeds the "postsecondary success" definition of 3.0.**

To What Extent Are High School Measures Related to Postsecondary Success?

- For two-year college students, **high school GPA* and the state standardized test in ELA are stronger predictors** of first-year college GPA** than either college entrance exams or the state standardized test in Algebra I.
- For four-year college students, **high school GPA, the state standardized test in ELA, and college entrance exams** are similarly strong predictors of first-year college GPA.

Correlations Between High School Measures and First-Year College GPA

Measure Type	High School Measure	Two-Year Colleges	Four-Year Colleges
GPA	HS GPA (Grade 10)	0.32	0.40
	HS GPA (Grade 12)	0.36	0.44
College Entrance Exam	ACT	0.25	0.43
	SAT	0.27	0.43
State Standard Test	ELA 10	0.32	0.42
	Algebra I†	0.20	0.37

Correlations measure the strength of the relationship between two measures and range between -1 and +1 with **a higher absolute value indicating a stronger relationship.**

* GPA of ELA, math and science courses, weighted by course credits earned. ** College GPA is based on the first 30 credits earned.
† Algebra I is typically taken 1-3 years earlier than the other test measures.

Which High School Measures Are the Best Predictors of Postsecondary Success?

Of the students that **met the high school threshold through GPA**, a **larger percentage** of students **had a first-year college GPA (FYGPA) above 3.0** than students who met the high school threshold through any other measure.

High School Measure	Two-year College		Four-year College	
	High School Measure Threshold Score	Percent Earned FYGPA above 3.0***	High School Measure Threshold Score	Percent Earned FYGPA above 3.0***
Grade 10 GPA	2.68	66%	2.81	78%
Grade 12 GPA	2.74	68%	2.83	80%
SAT	1010	61%	1070	75%
ACT	19	59%	21	76%
ELA 10†	756	63%	757	76%
Algebra I†	745	59%	751	74%

* GPA of ELA, math and science courses, weighted by course credits earned. ** College GPA is based on the first 30 credits earned.
*** Of students who met or exceeded the high school measure score. † The interim state CCR standard score is 750.

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How Are Multiple CCR Measures Related To Postsecondary Success?

Allowing for an option to meet a CCR standard through either GPA or through assessments increases the number of students meeting the standard while the average first-year college GPA for those students **still exceeds the "postsecondary success" definition of 3.0.**

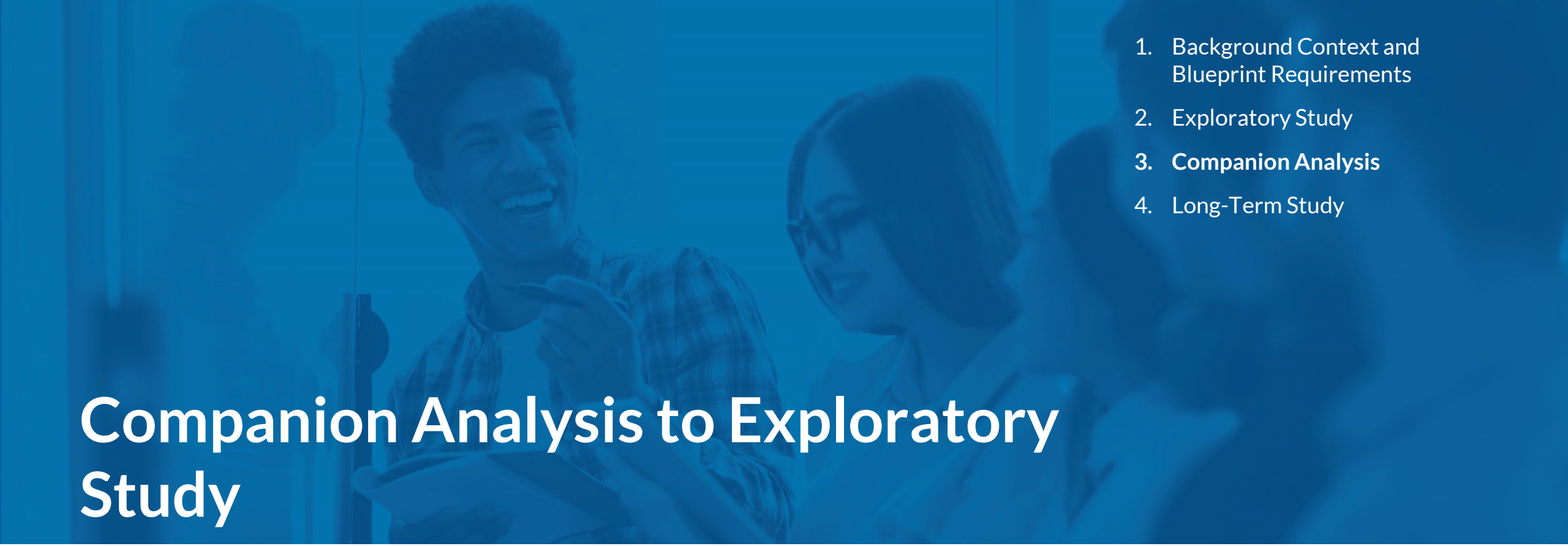
Two-Year Colleges

Met High School Measure In:	Number of Students	Average FYGPA	Percent at or above 3.0 FYGPA
ELA 10 **and** Algebra I	3,986	3.15	62%
GPA **or** (ELA 10 **and** Algebra I)	7,164	3.14	61%

Four-Year Colleges

Met High School Measure In:	Number of Students	Average FYGPA	Percent at or above 3.0 FYGPA
ELA 10 **and** Algebra I	22,029	3.36	78%
GPA **or** (ELA 10 **and** Algebra I)	29,697	3.23	75%

FYGPA is first-year college GPA. Analyses use 750 as the ELA 10 and Algebra I standards and 2.83/2.74 as the Grade 12 GPA standard for four- and two-year colleges, respectively.



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Companion Analysis to Exploratory Study

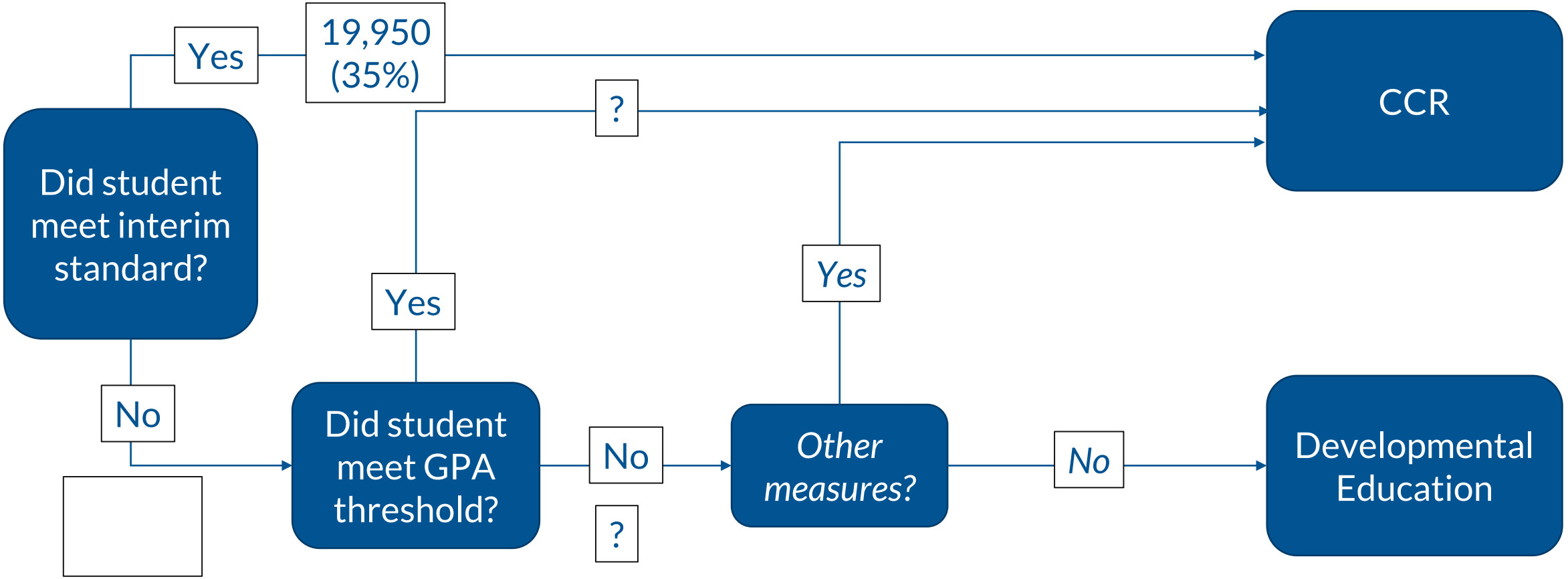
Internal MSDE analysis modeling CCR identification rates at the end of grades 10 and 12.

Overview of Companion Analysis

To extend the exploratory CCR study, MSDE simulated CCR identification rates of all students, regardless of postsecondary pathway, using multiple measures.

- Percentage of students who **met the interim CCR standard** by grade 10 and grade 12
  - Scored at level 4 or 5 on the PARCC ELA 10 and Algebra I
- Percentage of students who **did not meet the interim CCR standard but met a GPA** threshold identified by the exploratory study as aligned with postsecondary success
  - GPA based on course grades in English, math, science, and social studies
- Percentage of students who **did not meet either the test standard or the GPA threshold**
- Modeled on first-time grade nine students in 2015-2016 (expected graduation in 2019)**:**
  - 56,373 students at the end of grade 10
  - 60,056 students at the end of grade 12

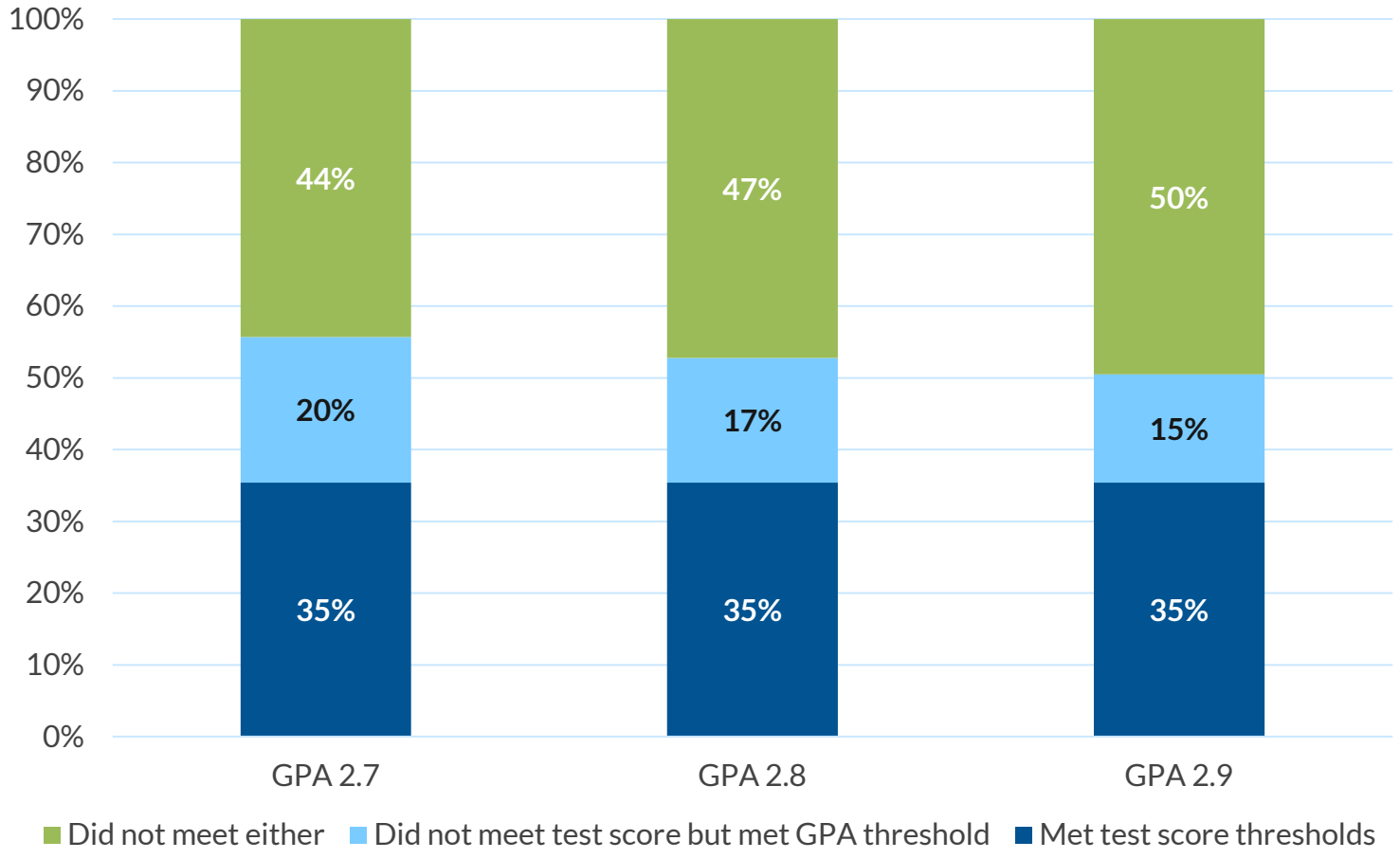
CCR Course Placement with Multiple Measures: Students at the end of 10th grade



Multiple Measures Model, Grade 10

Of the 56,373 students with a first ninth grade year of 2015-2016[1], **35% met the test standard** in both ELA and math by the end of grade 10.

A GPA standard would identify an additional 15-20% (or 8,500-11,200) of students by the end of grade 10, depending on the threshold.

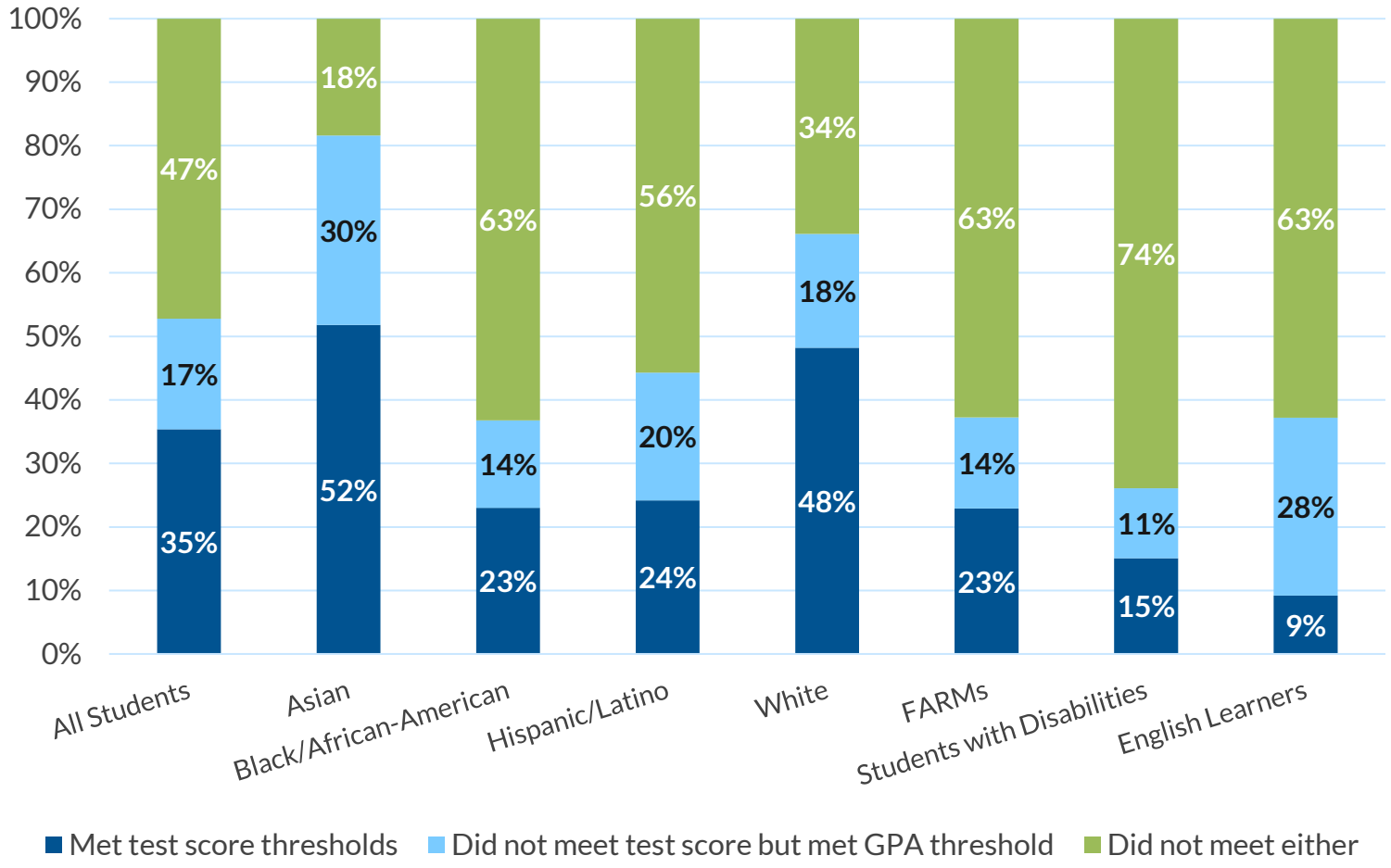


[1] Sample excludes students who did not complete the ELA10 and Algebra I assessments by the end of grade 10.
Note: GPA is calculated through a term-weighted approach based on letter grades received in ELA, Math, Science, and Social Studies courses.

Multiple Measures Model, Grade 10 by Student Group

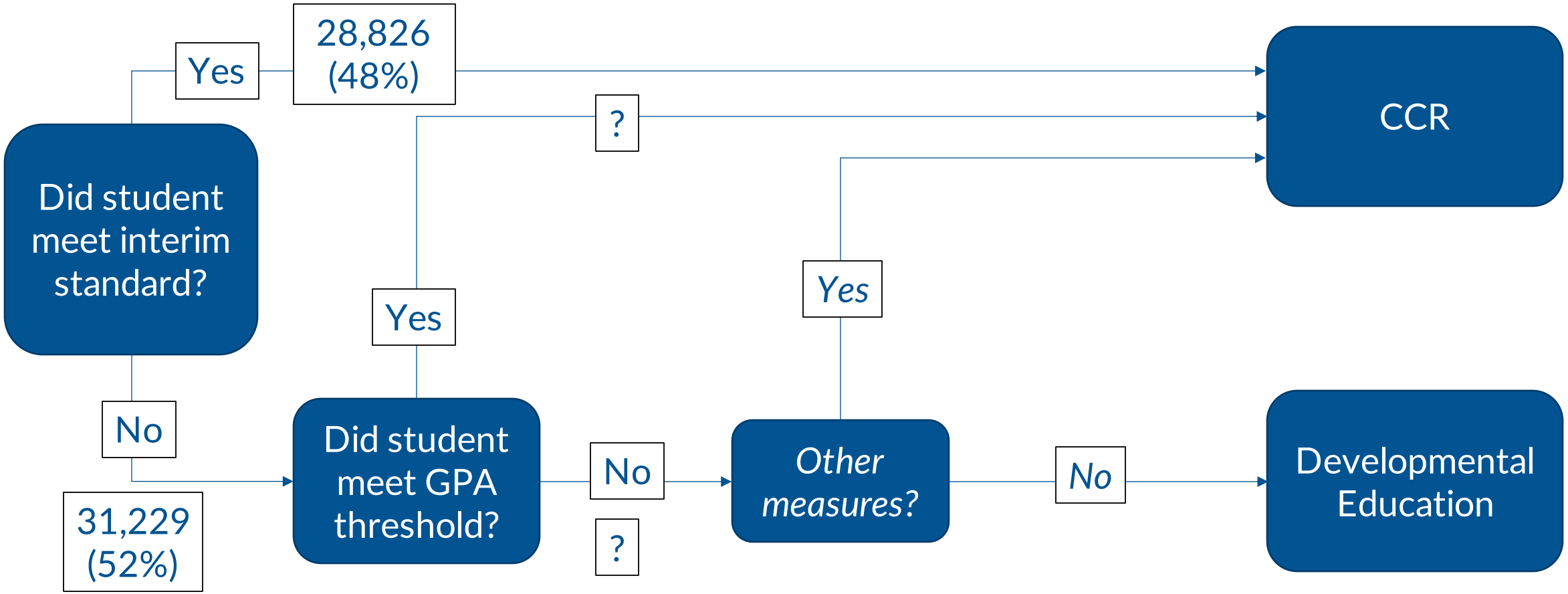
The percentage of students who **met the test standard in both ELA and math by the end of grade 10** by student group ranged between **9-52%**.

A GPA standard option of 2.8* would identify an additional 14-30% of students as CCR by the end of grade 10, including an additional **2,800 Black/African-American** students and **1,700 additional Hispanic/Latino students**.



*The exploratory study found that a high school GPA of 2.8 aligned with a first year GPA of 3.0 in two-year colleges.

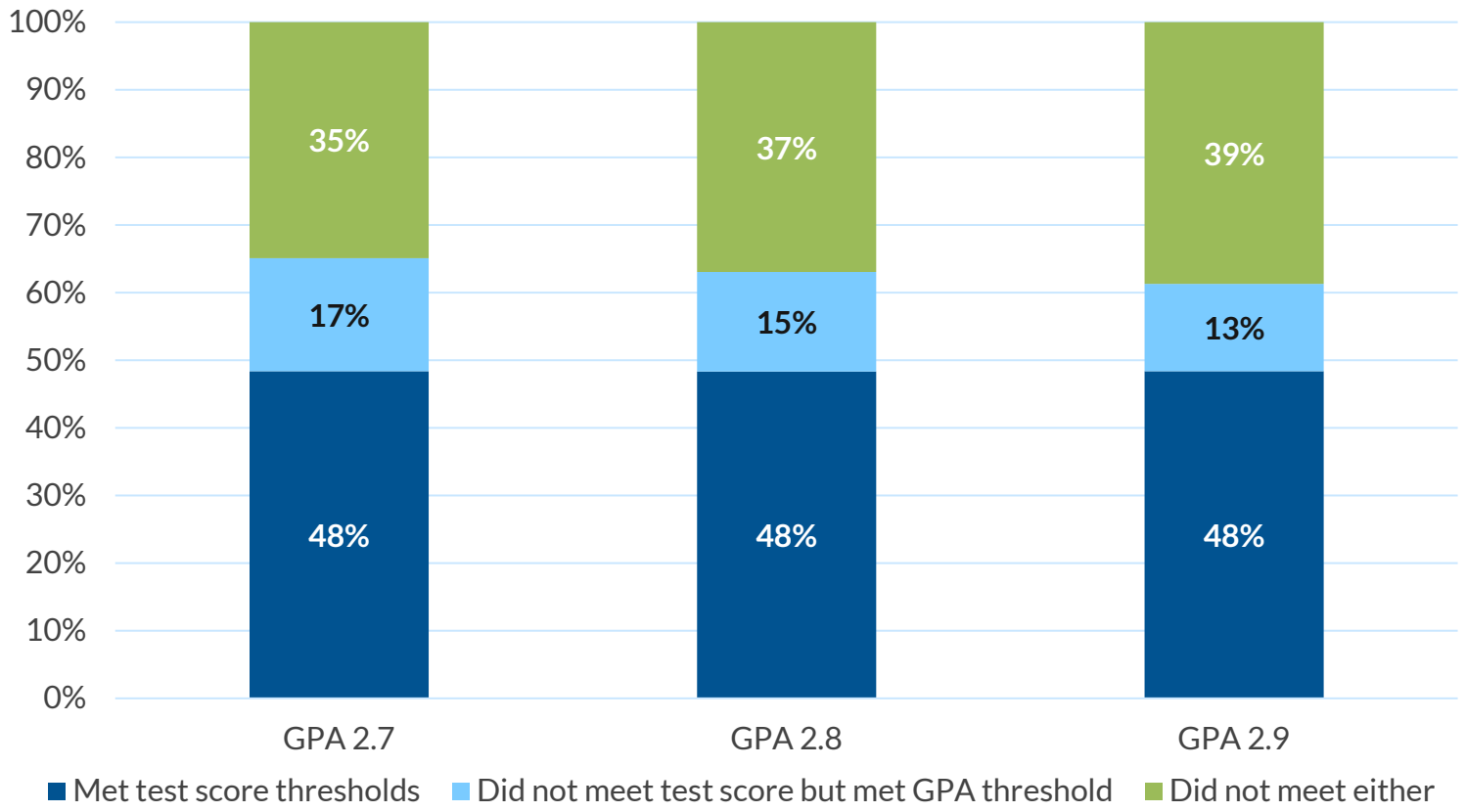
CCR Course Placement with Multiple Measures: Students at the end of 12th grade



Multiple Measures Model, Grade 12

Of the 60,056 students with a first ninth grade year of 2015-2016[1], **48% met the test standard** in both ELA and math by the end of grade 12.

A GPA standard option would identify an additional 13-17% (or 7,800-10,200) of students as CCR by the end of grade 12, depending on the threshold.

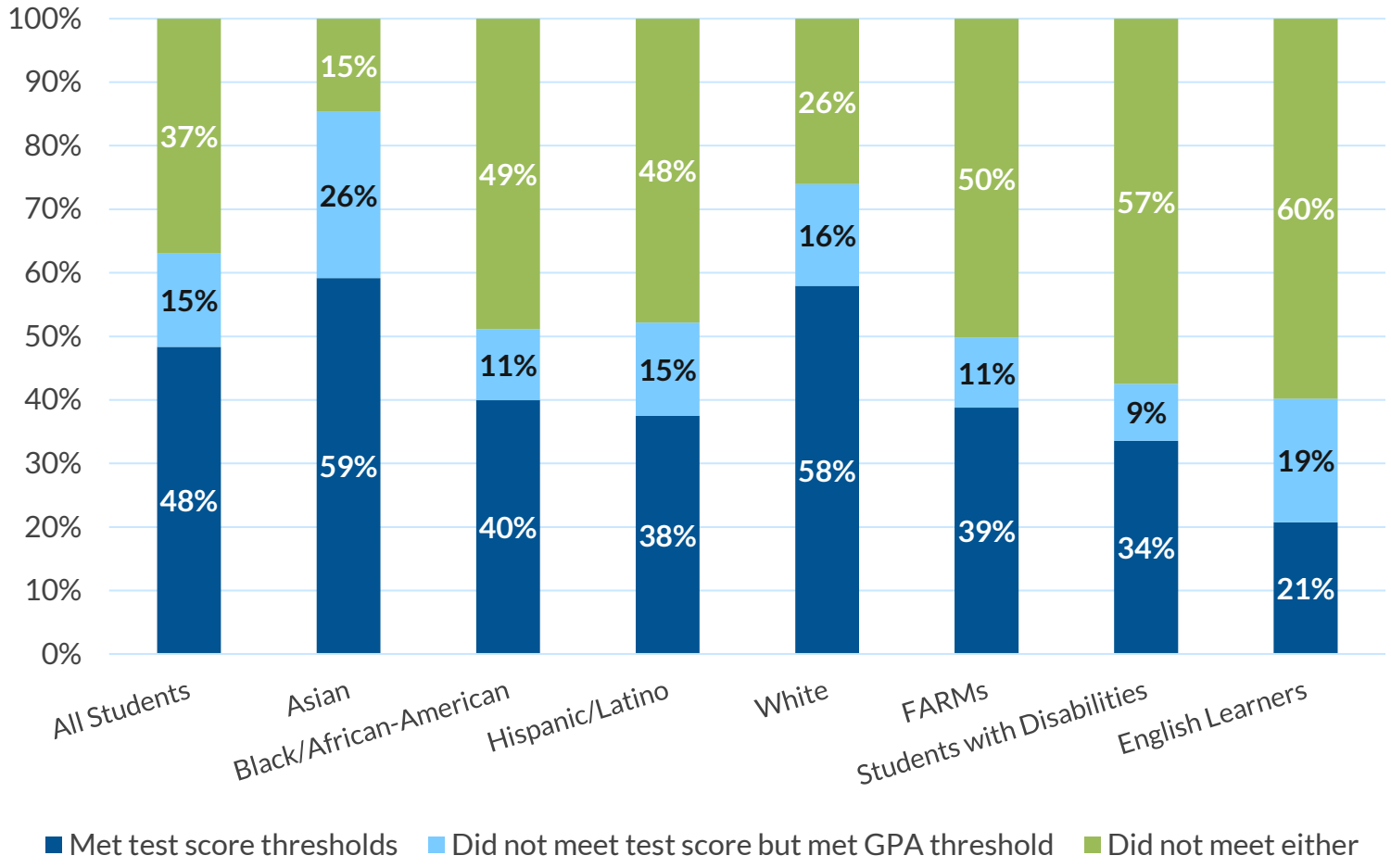


[1] Sample excludes students who did not complete the ELA10 and Algebra I assessments by the end of grade 12.
Note: GPA is calculated through a term-weighted approach based on letter grades received in ELA, Math, Science, and Social Studies courses.

Multiple Measures Model, Grade 12 by Student Group

The percentage of students who **met the test standard in both ELA and math by the end of grade 12** by student group ranged between **34-59%**.

A GPA standard of 2.8* would identify an additional 9-26% of students as CCR by the end of grade 12, including 2,300 additional Black/African-American students and 1,400 additional Hispanic/Latino students.



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Long-Term Study

Updates on the contract award to a research organization to perform a deep content analysis and quantitative relationship analysis.

Blueprint Requirements and Scope of Research Study

- Fulfilling Blueprint requirements, MSDE contracted with an **external research organization** to conduct an **empirical study of the skills, knowledge, and abilities needed to succeed in the first year** of Maryland community college coursework.
- The research will be comprised of **two different parts: a quantitative study and a content and standards alignment study.**
- To confirm and expand on the results of the Exploratory Study, the **quantitative component** of the Long-Term Study will:
  - Measure the **relationship between the interim CCR standard and student readiness to succeed** in entry-level credit-bearing coursework or postsecondary education training.
  - **Explore additional possible measures of student readiness** beyond the standard the interim CCR standard (e.g., **GPA**, course **credit attainment**, career and technical education (**CTE**) course credit attainment).
- The second research component, the **content and standards alignment study will**:
  - Complete a **deep content analysis to determine the levels and types of literacy in reading, writing, and mathematics** that are needed to succeed in entry–level courses and postsecondary training offered at colleges in the state.
  - Explore the **alignment of Maryland College and Career Ready Standards** to the content of entry-level credit-bearing **postsecondary courses and postsecondary training** and to **the content of remedial postsecondary courses**.
  - **Examine top–performing educational systems throughout the world** and consider **potential sources of bias** in assessments used to determine college and career readiness.
  - Gather perspectives through **focus groups** from a wide range of stakeholders in higher education, K-12, and workforce

Source: Annotated Code of Maryland, Education Article § 7–205.1

Timeline and Process

- To complete the critical research that will **inform the adoption of the CCR standard**, MSDE sought out the most qualified researchers in the industry, through a **Competitive Sealed Proposals process.**
- MSDE released a **Request for Proposals (RFP) on May 16, 2022.**
  - Copies of the solicitation notice were sent directly to **43 prospective vendors including six Maryland firms.**
- Firms had until July 14, 2022 to submit their proposals.
  - **5 proposals were received from researchers across the country.**
- An **evaluation committee of MSDE and LEA** staff members evaluated each proposal on its **technical merits**. The committee met with each offeror to discuss their proposal.
  - The **technical evaluations were then combined** with the evaluation of the financial offers.
- **On November 16, 2022, the Board of Public Works approved** the recommended contract.

Research Entity Partner

- The **American Institutes for Research (AIR)** was approved to conduct the long-term CCR standard study.
  - The **proposal submitted by AIR** was determined to be the **most advantageous** for the State. The evaluation committee determined AIR demonstrated a **superior understanding of the work** required and **provided specific details as to how they would satisfy the State's requirements. AIR's proposal provided a strong background and related experience**, having completed projects for the United States Department of Education, MSDE, and Anne Arundel County Public Schools. AIR defined a **concise project timeline and plan for meeting the expected deliverables.**
- **MSDE facilitated the official study kickoff meeting on December 1** and will **serve as a partner** during the research study.
  - **MSDE shared the summary of the results from the Exploratory Study** and **coordinated** between AIR and the Maryland Longitudinal Data System Center for data transfers. MSDE will also ensure all requirements of the study are completed, **including focus groups with community colleges.**
  - As specified in the Blueprint, **AIR will submit their final research report** to the Governor, the Maryland General Assembly, the AIB, and MSDE **on or before September 1, 2023.**

QUESTIONS?