



North Carolina Statewide Study Summary of Findings

About the Study

Discovery Education Research & Analysis compared DE partner schools in North Carolina to non-partner schools to study two key questions —

- To what extent is achievement on the North Carolina summative assessments, including the End of Grade (EOG), End of Course (EOC), and ACT, related to partnership with Discovery Education?
- Is there a significant link between subgroup achievement and partnership with Discovery Education?

DE compared the published school level data from The Accountability Services Division of the Public Schools of North Carolina for the 2016-2017 school year to a list of Discovery Education partners for same time period, resulting in an analysis of achievement of DE partner schools vs. non-DE partner schools.

- There are 34 performance indicators that show that DE partner schools perform better than non-DE partner schools.
- This positive correlation between DE partners and better scores found in the overall sample (i.e. all students) also holds for several different demographic subgroups.
- There are also several performance indicators in which the difference between DE partner and non-partner schools is statistically indistinguishable.

Limits of the Study

- The nature of this study can only reveal a correlation. It cannot and does not show a causal relationship between DE partnership and student achievement.
- This analysis does not consider the possibility of school or community levels of resources or previously existing performance selecting into the two main categories: DE partner and non-DE partner.
- This report is bound to the publicly available performance indicators, therefore the scope of the analysis is limited to public schools in North Carolina.

North Carolina schools in the sample

There are 116 NC School districts and 2404 schools in the dataset used for the forthcoming analysis. Of the 2404 schools, 62% are DE partners.

	Non-DE	Any DE Product	Math TB	Science TB	Total
# of School	914	1,490	193	644	2,404

At least 100,000 student assessments were taken for each of the performance indicators analyzed in the reports. When only considering the African-American/Black student subgroup this figure goes down to approximately 25 thousand assessments.

Methodology

The two sources of data for this study are the published data from The Accountability Services Division of the Public Schools of North Carolina published battery of performance indicators for each of its schools for the 2016-2017 school year and DE's internal data warehouse identifying which public schools in North Carolina were DE partners during the timeframe of this study. The two data sets were merged and schools without a list of products were coded as non-DE Partners and those with products were coded as DE Partners.

The assessments dataset includes the total number of students that took and passed the standard for each performance indicator by school. From this, an average percent of students reaching the benchmark was calculated for each performance indicator by DE partner schools (e.g. schools with any DE product) and non-DE partners (e.g. schools with no DE products). Each schools' rate of compliance was then weighted by their size (e.g. the number of students in each school taking the assessment). To test the robustness of the results, weighted significance t-tests at the 95% level of confidence were performed. These tests specifically check whether the observed rate of compliance of DE schools is statistically greater than that of non-DE schools.

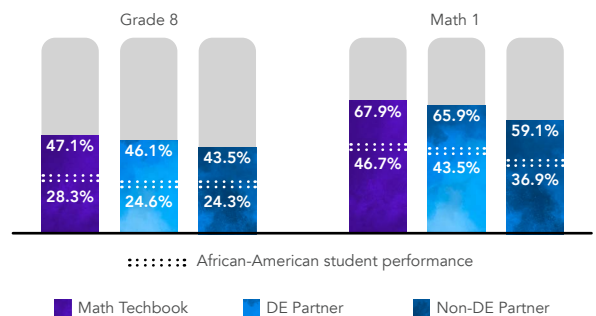
Each performance indicator matches onto one or more minimum standards by which schools are judged. In each EOC or EOG examination a student can receive a score between 1-5. Scores at or above 3 signify grade level proficiency (GLP). Scores at or above 4 signify college and career readiness (CCR). Similarly, students taking the ACT exam get a score for each subtest. The benchmark set for the Reading section of the ACT exam is 22 and for the English section it is 18 out of a possible 36 points.

Math Findings

- A. **Math Techbook** schools have a **9-point** statistically significant advantage over non-DE schools in the **EOC Math I** assessment.
- B. An **additional 5.5%** of students in **DE partner schools** meet the state's benchmark in the **ACT Math** section.
- C. **DE partner schools** perform particularly well throughout with a **statistically significant advantage** (over non-DE partners) in **EOC Math I, EOG Math for grades 3, 4, 5 and 6**, as well as in the **ACT Math** section.
- D. African-American/Black student subgroup:
 - **Math Techbook** schools have a **10-point** statistically significant advantage over non-DE schools in the **EOC Math I** assessment.
 - An **additional 6.6%** of African-American/Black student in **DE schools** achieve proficiency in the **EOC Math I** course.

GRADE-LEVEL PROFICIENCY RESULTS

% of students who met the state's GLP benchmark (2016-2017)

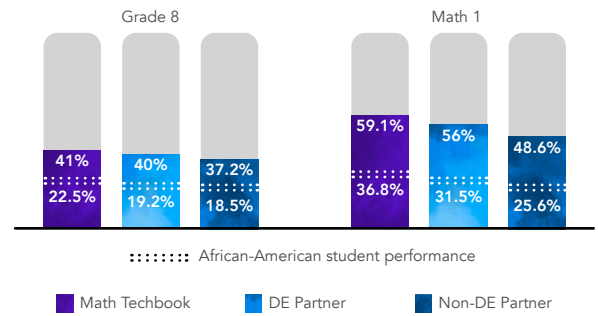


College and Career Ready

- A. **Math Techbook** schools have a **10.5-point** statistically significant advantage over non-DE schools in the **EOC Math I** assessment.
- B. DE partner schools perform particularly well throughout with statistically significant differences (over non-DE partners) in **EOC Math I, EOG Math for grades 3, 4, 5, 6 and 8**, as well as in the **ACT Math** section.
- C. An **additional 5.5%** of students in **DE partner schools** meet the state's benchmark in the **ACT Math** section compared to students in non-DE schools.
- D. **DE partner schools** have about a **5-point** advantage over non-DE partner schools in terms of college and career ready compliance in **grades 3, 4, and 5**.
- E. African-American/Black student subgroup:
 - **Math Techbook** schools have an **11-point** statistically significant advantage over non-DE schools in the **EOC Math I** assessment.
 - **3-4 point** statistically significant advantage for **Math Techbook** schools in **EOG Math grades 7 and 8**.

COLLEGE & CAREER READINESS RESULTS

% of students who met the state's CCR benchmark (2016-2017)



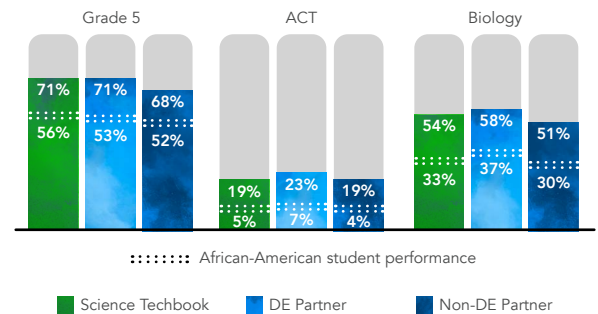
Science Findings

Grade Level Proficiency

- A. An **additional 4.3%** of students in **DE partner schools** meet the state's benchmark in the **ACT Science** section compared to students in non-DE schools.
- B. **DE schools** have a **6.7 point** advantage in **EOC Biology**.
- C. **Science Techbook** schools have a **3 point** advantage in **EOG Science Grade 5**.
- D. African-American/Black Student subgroup:
 - **Science Techbook** schools have a **4-point** statistically significant advantage over non-DE schools in **EOG Science Grade 5**.
 - **DE schools** have a **6.8 point** advantage in **EOC Biology**.

GRADE-LEVEL PROFICIENCY RESULTS

% of students who met the state's GLP benchmark (2016-2017)

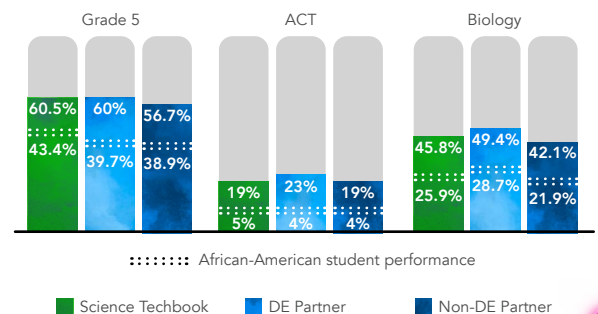


College and Career Ready

- A. **DE schools** have a **7.3 point** advantage in **EOC Biology**.
- B. **Science Techbook** schools have a **2-4 point** advantage in **EOG Science for grades 5 and 8**.
- C. African-American/Black Student subgroup:
 - An **additional 6.8%** of African-American/Black students

COLLEGE & CAREER READINESS RESULTS

% of students who met the state's CCR benchmark (2016-2017)



taking the **EOC Biology** assessment in **DE partner schools** meet the state's college and career ready benchmark compared to students in non-DE schools.

- **Science Techbook schools** have a **4-point** statistically significant advantage over non-DE schools in **EOC Biology and EOG Science Grade 5**.

Reading/ELA Findings

Grade Level Proficiency

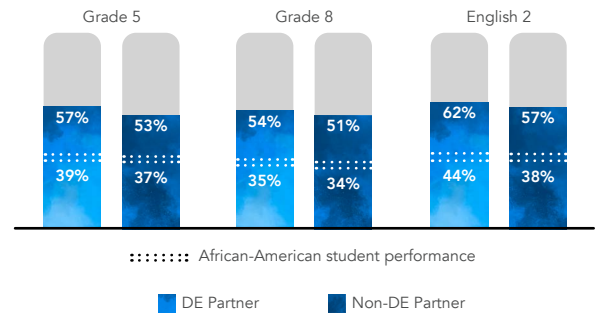
- DE schools** have a **5.4-point** statistically significant advantage over non-DE schools in the **EOC English 2** assessment.
- DE schools** have a **3-4 point** advantage in compliance with proficiency benchmarks, over their counterparts in Reading for grades 3 through 5.
- DE schools** are particularly strong in both the **ACT English and ACT Reading** sections with an **additional 5%** of students meeting the state's benchmarks.
- African-American/Black Student subgroup:**
 - **DE schools** have a **6.1-point** statistically significant advantage over non-DE schools in the **EOC English 2** assessment.
 - An **additional 5%** of **DE school** students met the state's benchmarks in both the **ACT English and ACT Reading sections**.

College and Career Ready

- DE schools** have a **6.2-point** statistically significant advantage over non-DE schools in the **EOC English 2** assessment.
- DE schools** have a **3-5 point** advantage in compliance with college and career ready benchmarks over their counterparts in **Reading for grades 3 through 5**.
- African-American/Black Student subgroup:**
 - **DE schools** have a **5.9-point** statistically significant advantage over non-DE schools in the **EOC English 2** assessment.

GRADE-LEVEL PROFICIENCY RESULTS

% of students who met the state's GLP benchmark (2016-2017)



GRADE-LEVEL PROFICIENCY RESULTS

% of students who met the state's CCR benchmark (2016-2017)

