How Do Students’ 3rd Grade Reading Levels Relate to their ACT/SAT Performance and Chance of Graduating from High School?

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Introduction

Reading proficiency in 3rd grade is an important educational milestone that is often linked to future academic success. As summarized by the Get Georgia Reading campaign:

The end of third grade marks the critical time when children shift from learning to read to reading to learn. Children unable to make this shift face serious barriers for future learning, because they can’t grasp half of the printed fourth-grade curriculum and beyond, including math and science. As a result, these children fall even further behind. Children who can’t read proficiently by the end of third grade are more likely to experience poor health, have discipline problems, become teen parents, and drop out of high school. As adults, they’re more likely to spend time in prison, struggle with unemployment, and face shorter life expectancies.

With this context in mind, this report analyzes the relationship between 3rd grade reading proficiency and several indicators of future academic success: the percentage who graduate from high school, the percentage who take the ACT or SAT, and average ACT and SAT scores. For the first time, data from GA•AWARDS, Georgia’s longitudinal education data system, has enough history to follow students from 3rd grade through high school graduation.

The report examines a cohort of 9th grade students from the 2012-2013 school year who took the reading Criterion-Referenced Competency Test (CRCT) as 3rd graders in 2006-2007 (see Figure 1).

Figure 1: Students in Analysis

1 See, for example, “Learning to Read, Reading to Learn: Why Third-Grade is a Pivotal Year for Mastering Literacy.”
Examining a 9th grade cohort makes the analysis more comparable to four-year graduation rates that are traditionally calculated. For the purposes of this analysis, the cohort is divided into three groups based on performance levels on the 3rd grade reading CRCT: exceeds expectations, meets expectations, and does not meet expectations.

Overall, students who earned higher scores on the 3rd grade reading CRCT had higher high school graduation rates, were more likely to take the ACT or SAT, and had higher average ACT and SAT scores compared to students in the other performance levels. This pattern holds across race/ethnicities, gender, poverty, English language learner status, and students with disabilities. It is important to note that, while this report provides general trends in high school outcomes by 3rd grade reading performance, it does not establish that 3rd grade reading levels cause higher high school graduation rates or SAT/ACT performance. Many other factors that are not taken into account affect these outcomes.

The report begins with an overview of the 9th grade cohort of students being analyzed. The next section presents patterns in high school graduation rates, followed by an analysis of ACT and SAT performance. It concludes with a summary of findings.

### Overview of Students Included in Analysis

During the 2012-2013 school year, 98,162 9th grader had scores on the 3rd grade reading CRCT in 2006-2007, representing 75% of the total 9th grade cohort that year. Over half of these students scored in the meets expectations category, 34% scored in the exceeds expectations category, and 11% did not meet expectations.

![Figure 2: 3rd Grade Reading Levels of 2012-2013 9th Grade Students](image)

3 Students must be in the 9th grade for the first time during this school year to be included in the cohort.

4 Prior to 2015, the statewide assessments did not have high proficiency standards, resulting in about 90% or more students earning meets or exceeds expectations on the 3rd grade reading CRCT. As a result, this analysis splits the meets and exceeds groups to show more differentiation in reading level. For more information on Georgia’s low proficiency standards on the CRCT relative to other states, see this article from *Education Next.*

As seen in Table 1 below, the percentage of students in each performance category varies by race/ethnicity and other subgroups.

- Asian (50%) and white students (48%) had much higher rates of students in the exceeds expectations category than students in other race/ethnicity subgroups.
- Black, Hispanic, and Pacific Islander students had higher rates of students in the does not meet expectations category (between 17-18%) than students in other race/ethnicity subgroups.
- Female students had a higher exceeds rate than male students.
- Economically disadvantaged students (ED), English Language Learners (ELL), and students with disabilities (SWD) had lower exceeds rates than other students.

- ELL (50%) and students with disabilities (41%) had far higher rates of students in the does not meet expectations category than other students.

### Table 1: Summary Statistics by Demographic Subgroup

<table>
<thead>
<tr>
<th>Group</th>
<th>3rd Grade Not Meeting</th>
<th>3rd Grade Meeting</th>
<th>3rd Grade Exceeding</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number % of Total</td>
<td>Number % of Total</td>
<td>Number % of Total</td>
<td>Number</td>
</tr>
<tr>
<td>All Students</td>
<td>11,256 11%</td>
<td>53,187 54%</td>
<td>33,719 34%</td>
<td>98,162</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>25 11%</td>
<td>132 60%</td>
<td>62 28%</td>
<td>219</td>
</tr>
<tr>
<td>Asian</td>
<td>146 5%</td>
<td>1,319 45%</td>
<td>1,439 50%</td>
<td>2,904</td>
</tr>
<tr>
<td>Black</td>
<td>6,324 17%</td>
<td>22,601 62%</td>
<td>7,256 20%</td>
<td>36,181</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1,719 17%</td>
<td>6,462 63%</td>
<td>2,078 20%</td>
<td>10,259</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>13 18%</td>
<td>43 59%</td>
<td>17 23%</td>
<td>73</td>
</tr>
<tr>
<td>Two or More Races</td>
<td>224 9%</td>
<td>1,359 52%</td>
<td>1,009 39%</td>
<td>2,592</td>
</tr>
<tr>
<td>White</td>
<td>2,805 6%</td>
<td>21,271 46%</td>
<td>21,858 48%</td>
<td>45,934</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>4,525 9%</td>
<td>26,216 53%</td>
<td>18,428 37%</td>
<td>49,169</td>
</tr>
<tr>
<td>Male</td>
<td>6,731 14%</td>
<td>26,971 55%</td>
<td>15,291 31%</td>
<td>48,993</td>
</tr>
<tr>
<td>Other Subgroups</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economically Disadvantaged</td>
<td>8,922 16%</td>
<td>33,625 62%</td>
<td>11,990 22%</td>
<td>54,537</td>
</tr>
<tr>
<td>English Language Learners</td>
<td>623 50%</td>
<td>584 47%</td>
<td>32 3%</td>
<td>1,239</td>
</tr>
<tr>
<td>Students with Disabilities</td>
<td>4,078 41%</td>
<td>4,976 50%</td>
<td>856 9%</td>
<td>9,910</td>
</tr>
</tbody>
</table>

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5 Economically disadvantaged as determined by free/reduced-price lunch. Only students with disabilities who took the CRCT are included in this analysis.
High School Graduate Rates and 3rd Grade Reading Levels

To assess patterns in high school graduation rates, the analysis follows the 9th grade cohort from 2012-2013 through the 2015-2016 school year.

The graduation rate is computed as follows:

\[
\text{Number of High School Graduates} = \frac{\text{Number in the 9th Grade Cohort} - \text{Number of Students Who Transfer out of State, Emigrate, or Die}}{6}
\]

Nearly 89% of students who scored in the exceeds expectations category in 3rd grade reading graduated high school, compared to 78.4% of students in the meets expectations category and 60.5% of students in the does not meet expectations category.

Figure 3: 2016 High School Graduation Rate by 3rd Grade Reading Level

88.9%
78.4%
60.5%

Exceeds  Meets  DNM

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6 As determined by the following withdrawal codes in the last year of enrollment in public school: D-death, H-attend home study, J-transferred out of county, K-transferred to a private school, N-transferred to a Department of Defense school, X-transferred out of state, and Z-SB10 transfer to private school.
A similar pattern exists by race/ethnicity, gender and the other subgroups as well; the graduation rates are highest for those who scored in the exceeds expectations category.  

- Black, White, and Hispanic students in each performance level graduated at nearly the same rates. Asian students graduated at higher rates than other subgroups in each level (Figure 4).
- While the graduation rate of female students in the exceeds expectations group was only 2.5 points higher than male students, the rate in the does not meet expectations group was 10.9 points higher (Figure 5).
- Economically disadvantaged students, English language learners, and students with disabilities across all three performance levels graduated at lower rates than all students (Figure 6).
- In all three performance levels, economically disadvantaged students had graduation rates almost ten points lower than students who were not economically disadvantaged (Figure 7).

**Figure 4: High School Graduation Rate by Race/Ethnicity**

When race/ethnicity, gender, and economically disadvantaged are taken into account simultaneously, students in the exceeds expectations category have the highest graduation rates across all combinations with ten or more students. American Indian or Alaskan Native and Pacific Islander subgroups were excluded because there were fewer than ten graduates in one or more performance levels.
Figure 5: High School Graduation Rate by Gender

Figure 6: High School Graduation Rate by Other Subgroups

Figure 7: High School Graduation Rate by 3rd Grade Reading Level and Economically Disadvantaged Status
ACT/SAT Performance and 3rd Grade Reading Levels

For many colleges and universities, ACT or SAT scores are required for admission. To assess patterns in performance on the SAT and ACT, this analysis follows the 9th grade cohort through the 2015-2016 school year to analyze whether students took either test and the students’ highest score on each test, if taken.

When comparing ACT/SAT performance between groups, it is important to consider the differences in test participation between groups. The lower participation rates among students may indicate a lack of access to the test, lower postsecondary expectations, or other barriers to taking the test.

- Nearly 75% of students who scored in the exceeds expectations category took either the SAT or the ACT, while only 49% of those who scored in the meets expectations category took either test. This percentage drops to 25% for those who scored in the does not meet category (Figure 8).
- This ACT/SAT test participation decline by performance level existed in all subgroups (Table 2).
Table 2: Percentage of Students Taking ACT/SAT by Performance Level and Subgroup

<table>
<thead>
<tr>
<th>Group</th>
<th>3rd Grade Not Meeting</th>
<th>3rd Grade Meeting</th>
<th>3rd Grade Exceeding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACT or SAT Test Takers</td>
<td>ACT/SAT Participation Rate</td>
<td>ACT or SAT Test Takers</td>
</tr>
<tr>
<td>All Students</td>
<td>2,774</td>
<td>25%</td>
<td>25,899</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>88</td>
<td>60%</td>
<td>1,048</td>
</tr>
<tr>
<td>Black</td>
<td>1,775</td>
<td>28%</td>
<td>11,771</td>
</tr>
<tr>
<td>Hispanic</td>
<td>341</td>
<td>20%</td>
<td>2,710</td>
</tr>
<tr>
<td>Two or More Races</td>
<td>55</td>
<td>25%</td>
<td>630</td>
</tr>
<tr>
<td>White</td>
<td>507</td>
<td>18%</td>
<td>9,660</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1,348</td>
<td>30%</td>
<td>14,281</td>
</tr>
<tr>
<td>Male</td>
<td>1,426</td>
<td>21%</td>
<td>11,618</td>
</tr>
<tr>
<td>Other Subgroups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economically Disadvantaged</td>
<td>1,983</td>
<td>22%</td>
<td>13,843</td>
</tr>
<tr>
<td>English Language Learners</td>
<td>116</td>
<td>19%</td>
<td>133</td>
</tr>
<tr>
<td>SWD</td>
<td>579</td>
<td>14%</td>
<td>1,229</td>
</tr>
</tbody>
</table>

Subgroups with fewer than ten test takers in any performance category are excluded from these figures.
Of students who took the SAT or the ACT, the average score of those students in the exceeds expectations performance level in 3rd grade is higher than the average score of students who scored in either the meets expectations or the did not meet expectations performance levels.

- The average ACT score for students in the exceeds expectations performance level was 24 out of 36, which is 5.5 points higher than the average score for students in the meets expectations category and 8.4 points higher than students in the does not meet expectations category.
- Similarly, the average SAT score for students in the exceeds expectations performance level was 1614 out of 2400, compared to 1312 for students in the meets expectations category and 1096 for students in the does not meet expectations category.
- For both assessments, these patterns held across race/ethnicities, gender, and other subgroups.

Figure 9: Average Scores by Subgroup
Summary

Students who earned higher scores on the 3rd grade reading CRCT had higher high school graduation rates, were more likely to take the ACT or SAT, and had higher average ACT and SAT scores compared to students in the other performance levels.

- Nearly 9 in 10 students who exceeded expectations on the 3rd grade reading CRCT graduated from high school nine years later. Only 6 in 10 students who did not meet expectations in 3rd grade reading graduated nine years later.
- Male students who did not meet expectations on the 3rd grade reading CRCT were 11 percentage points less likely to graduate than female students in that performance level.
- In all three performance levels, economically disadvantaged students had graduation rates almost ten points lower than students who were not economically disadvantaged.
- Three-fourths of students who scored in the exceeds expectations performance level in 3rd grade took either the SAT or ACT in high school. Only one-fourth of students in the does not meet expectations performance level took either test.
- The average ACT and SAT score of students in the exceeds category in 3rd grade was significantly higher than students in both the meets and does not meet expectations performance levels.

The graduation rate, ACT/SAT participation rate, and ACT/SAT score patterns were consistent regardless of student race/ethnicity, gender, poverty, ELL status, and disability status.

It is important to note that, while this report provides general trends in high school outcomes by 3rd grade reading performance, it does not establish that 3rd grade reading levels cause higher high school graduation rates or SAT/ACT performance. Many other factors that are not taken into account affect these outcomes.
Acknowledgements

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