Research Watch
DATA AND ACCOUNTABILITY DEPARTMENT

**D&A Report No.13.15** **December 2013**

# WCPSS High School Retention 2011-12

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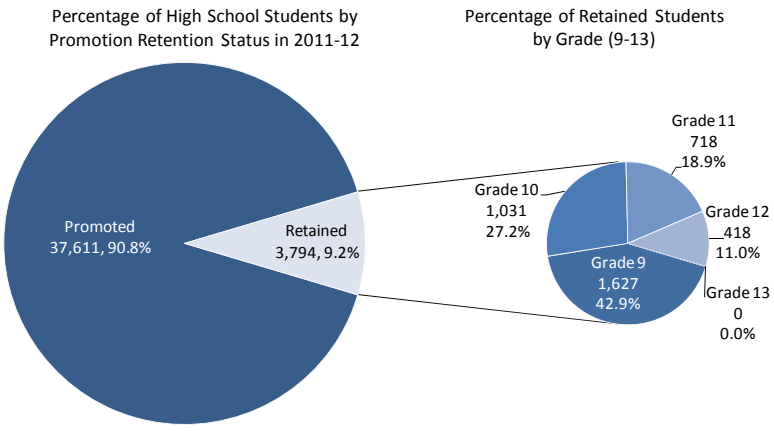
## Summary

This report focuses on in-grade retention at the high school level. It examines the promotion standards that Wake County Public School (WCPSS) high school students retained in 2011-12 failed to meet, as well as the availability of, and participation in, supports for students entering high school below grade level in reading and/or mathematics. High school students represented over three fourths of retained students in 2011-12. Paeplow (2013) *Promotion Retention Rates, 2011-12* revealed that students in grades 9 and 10 experienced the highest retention rates. As Figure 1 depicts, 9% of high school students were retained in 2011-12. At the high school level, being retained means repeating the courses failed rather than the entire grade.

**Figure 1**
*Percentage of High School Students Promoted and Retained, 2011-12*




Data Source: 2011-12 Retention, Promotion, Graduation (RPG) dataset
Note: Grade 13 represents students enrolled in the Wake Early Colleges

## Abstract

Retention means repeating one or more courses in high school, rather than a full grade. Over 3,500 high school students were retained in 2011-12 in WCPSS, with the largest numbers in grades 9 and 10. Some students enter high school below grade level. In 2011-12, half the WCPSS high schools had greater than 30% of students entering 9th grade below grade level in reading and greater than 20% below grade level in mathematics based on EOG scores from grade 8. Of retained students in grade 9: nearly two thirds failed English I; more than half failed science and social studies; and nearly half failed mathematics. In addition, 1 in 5 retained students in grade 9 passed English I, but were missing credit in another course subject. While high schools have resources for students performing below grade level (e.g.,"bridging" courses and general supports) the supports examined were limited and/or underutilized, with the exception of mathematics support courses. Fewer than 15% of students who entered high school below grade level were enrolled in a reading support course. Based on the study's findings, it is recommended that staff: identify and utilize early indicators to determine students in need of extra support; find ways to increase the availability and usage of middle and high school supports for struggling students and monitor their success; and examine practices that may help lower retention rates.

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WAKE COUNTY PUBLIC SCHOOL SYSTEM

## Introduction

WCPSS' Promotion and Intervention Policy 5530 requires high school students to meet local and state graduation requirements which include demonstrating proficiency on state tests and credit accumulation in grades 9-12 (see *Promotion Retention Rates, 2011-12* for additional information). Credit requirements vary by school calendar, date of entry to high school, course of study, and school program. Students must have 21 to 26 total credits for graduation and successfully complete "core" courses to be promoted. For example, students in grade 9 are required to complete English I along with two other core credits in mathematics, social studies, or science in order to be promoted to grade 10 (High School Planning Guide 2011-2012). Table 1 displays the two sets of high school promotion requirements in 2011-12 based on school.

**Table 1**

*2011-12 High School Promotion Requirements*

| From Grade | Promotion Criteria | Credits |
|---|---|---|
| | **High Schools beginning with students entering ninth grade for the first time in 2003-2004:**<br>*Apex, Athens Drive, Broughton, Cary, East Wake School of Arts, Education & Global Studies, East Wake Engineering Systems, East Wake Health Science, East Wake Integrated Technology, Fuquay Varina, Garner, Green Hope, Holly Springs, Knightdale, Leesville Road, Middle Creek, Millbrook, Panther Creek, Sanderson, Wake Forest-Rolesville, Wakefield* | |
| 9 | English I, two credits in the areas of mathematics, social studies, or science, and three additional credits | 6 |
| 10 | English II, one credit in mathematics, one in social studies, one in science, and two additional credits | 12 |
| 11 | English III and enrollment in a program which, if successfully accomplished, will result in the completion of graduation requirements | 18 |
| | **High School Students entering ninth grade for the first time in 2001-2002 through 2008-2009:**<br>*Enloe, Longview, Phillips, and Wake Early College of Health and Sciences, Wake-NC State STEM Early College, Southeast Raleigh***.** | |
| 9 | English I, two credits in the areas of mathematics, social studies, or science, and one additional credit | 4 |
| 10 | English II, one credit in mathematics, one in social studies, and one in science | 8 |
| 11 | English III and enrollment in a program which, if successfully accomplished, will result in the completion of graduation requirements | 14 |

Data Source: High School Planning Guide 2011-2012

Note: 1. 9th graders entering Southeast Raleigh High School for the first time in 2009-2010 needed 26 credits to graduate. They will follow the first set of promotion requirements.

2. See 2011-12 graduation standards for grade 12 (High School Planning Guide 2011-2012).

Retention at the high school level, unlike elementary and middle school retention, does not necessarily require a student to repeat the course work for the entire grade level. Rather students

may be retained in-grade for failing to pass as few as one required core course; for these students, promotion to the next grade level can occur once they have successfully completed the failed course. In a school with a block schedule, this could mean a mid-year promotion while students participating in a summer course could be promoted at the end of the summer.

The ability for our students to successfully navigate through high school and graduate on-time depends on students' ability to be promoted to the next grade level. The importance of on-time graduation is also a measure of a high school's success. Indeed, under the recently passed North Carolina's Excellence Public Schools Act, high schools will receive an overall performance grade based on seven school performance grade point elements including the percentage of students who graduate within four years (General Assembly of NC, 2011). Given that retention makes on-time graduation less likely, it is important to revisit ways to support students so that failing grades and retention can be reduced.

## Prior Research

Although research on in-grade retention indicates that retention does not typically increase student performance, the use of retention is wide-spread among school districts throughout the U.S. (Bowman, 2005). Prior research has found in-grade retention to have a negative impact on students' future academic and social outcomes (Leckrone & Griffith, 2006; Smink, 2001). While Jacob and Lefgren's (2009) study found no effect on high school completion for students retained in grade 6, low-achieving students in grade 8 who had been retained at the elementary level had a substantial increase in their probability of dropping out of high school. Prior research has found that retentions, especially multiple retentions, are highly related to students' chances of dropping out of high school (Leckrone & Griffith, 2006). Leckrone & Griffith (2006) assert that "for retained children, bored and discouraged with their schooling and overage for grade, the threat of withholding a diploma rarely stimulates them to engage in school" (p. 54). Rumberger (1995) found in-grade retention to be the most powerful predictor of whether a student will drop out of school. Leckrone and Griffith (2006) concluded that "retention as a response to a student not meeting academic milestones has an unintended negative impact on a student's academic future, behavioral and emotional adjustment, and participation as adults in society" (p. 57). Indeed, Smink (2001) asserted there is also a negative societal impact of retention beyond that experienced by the retained students.

Although the merits of in-grade retention have long been debated in educational research, the increased focus on educational accountability in recent years has resulted in states implementing policies that require elementary students to meet explicit performance goals to be promoted to the next grade level (Jacob & Lefgren, 2009). Under the increased school accountability and student achievement advocated by most state lawmakers, there has been a clear trend toward not allowing students any form of conditional promotion and requiring retention for students performing below state standards based on high-stakes tests (with the exception of Iowa) (Smink, 2001). Unfortunately, these decisions have not been "based on sound educational research information about how to increase academic achievement scores of all students, which would eliminate the need to even deal with grade retention or promotion polices" (Smink, 2001, p. 4).

Stone and Engel (2007) examined 22 students retained following the implementation of Chicago's Ending Social Promotion Policy and found that while there was some variation in terms of remedial supports, retained students reported "little guidance from teachers" and that they generally used the same learning strategies. Furthermore, they found that retained students were more academically successful if they had high levels of instructional support and changed their learning strategies (p. 605). Given these findings, this report will include an examination of the availability of, and participation in, support for WCPSS' students entering high school below grade level.

# Methods

## Student Population

The North Carolina Department of Public Instruction requires that students be identified by schools as promoted, graduated, or retained at the end of each school year (students promoted during the summer are not reflected in these data). Graduates are considered promoted. High school students enrolled in a WCPSS high school in 2011-12 represent the student population examined in this report. While the population included all high school students, the student group focused on in this study was high school students retained at the end of the 2011-12 school year. In order to describe the academic strength of students prior to entering high school, the End-of-Grade (EOG) scores in grade 8 were examined for 2011-12 high school students; therefore, analyses examining students entering high school below grade level were restricted to students with a grade 8 reading or mathematics EOG score.

## Data Sources

This study included 2011-12 promotion retention data, historical grade and course data, and 2011-12 high school student roster data files. The 2011-12 promotion retention file provided the students' retention status at the end of the 2011-12 school year and was used to capture the high school population of study. The historical grade and course data included a record of all the middle and high school courses for WCPSS high school students and were retrieved from NCWise database. The 2011-12 high school student roster file was used to capture the demographics and EOG score history for the 2011-12 high school student population.

In order to capture supports provided to students beyond those provided through a support course, additional data sources included the 2012-13 High School Program Inventory, the 2012-13 Central Program Inventory, and personal education plans (PEPs) accessed through the PEP Intervention Monitoring Report. Although the focus of this study was 2011-12, the central and high school level program inventories conducted in 2012-13 were used since the program inventories were not captured in 2011-12. The 2012-13 program inventories indicated the year the program began and were therefore applicable to the current study.

## Research Questions

In order to examine the promotion standards that high school students retained in 2011-12 failed to meet as well as the availability of, and participation in, supports for students entering high school below grade level in reading and/or mathematics the following questions were posed:

1. What are the demographic characteristics of high school students retained in 2011-12?
   a. How does retention vary by student subgroup, grade, and school?
   b. Does grade 8 EOG performance predict students' promotion status in grade 9?
   c. What percentage of retained high school students are promoted at the end of the summer?
   d. What percentage of retained high school students were also retained the prior year?

2. Which promotion standards did high school students fail to meet in 2011-12?
   a. What core subjects did retained students fail?
   b. What credit requirements were not met by retained students?

3. What was the availability of, and participation in, supports for academically weak students?
   a. What support courses are available to students entering high school below grade level?
   b. Does participation in support courses reduce the likelihood that academically weak students will be retained?
   c. What centrally supported programs are available to students struggling academically?
   d. What additional school-level support programs are available to students struggling academically?
   e. What individual level intervention do students struggling academically receive?

## Data Analysis

The demographic characteristics of high school students retained in 2011-12 were shown utilizing quantitative descriptive statistics (e.g., percentages and counts, means, ranges, etc.).

The relationship between the percentage of students entering a high school below grade level and the percentage of students retained at that school was examined using regression analysis (see Appendix A). This analysis plotted the relationship of these two variables and provided a prediction line and 95% confidence band (displaying with 95% confidence the relationship between retention and prior achievement).

Additionally, a logistic regression analysis was conducted to test this relationship at the student level by estimating whether a student's grade 8 EOG score could predict their promotion status in grade 9. Reading and mathematics EOG scores in grade 8 were dichotomized into *on-grade level* and *below grade level*. The logistic regression model was used to estimate the predictor variables—grade 8 EOG scores, limited English proficiency (LEP) status, and disability status of (i.e., students with disabilities or SWD status)—effect on the likelihood of being retained in grade. A chi-square was conducted to test if there was a significant difference between students above and those below grade level in terms of their being retained (see Appendix B).

High school promotion standards require students to successfully complete "core" courses and accumulate a certain number of credits based on the student's grade level, course of study, and school calendar requirements. In order to determine which promotion requirements were contributing to students' retention, course data were examined using the historical grades and course data. Course codes and course names were screened for subject and grouped into core subject areas—English, mathematics, science, and social studies—to determine the degree to which students were successful or unsuccessful with each of these required subject areas. Credit accumulation was examined based on the number of credits acquired accounting for grade, school schedule, and course of study requirements.

Next, the question of what supports were available to, and used by academically weak students was examined both quantitatively and qualitatively. To examine the impact participation in support or "bridging" courses had on retention, retained students participating in support courses were matched to nonparticipating students who were academically and demographically similar. A propensity score-matching method was used to correct for possible selection bias due to observable differences between the student group being studied (i.e., retained students) and the matched comparison group of academically similar students promoted in 2011-12 (Dehejia & Wahba, 2002).

To clarify, propensity score-matching assigns a population of students a probability score based on the matching criteria, and then matches the students based on this score. The matching criteria used for this study were grade 8 reading and mathematics EOG scores, reading and mathematics academic change scores, and LEP and SWD status.[1] This matching technique attempts to mimic random assignment by creating a control group that is comparable to the study group, and is superior to simple matching procedures that may require weighting of matching criteria. Dehejia and Wahba (2002) assert that propensity score-matching methods are useful "…because they provide a natural weighting scheme that yields unbiased estimates of the treatment impact" (p. 151). The propensity score-match was run utilizing a *greedy match* procedure that matches students' propensity scores first using five decimals (by subject 91% to 99% of students matched on the first iteration) then has an additional four matching attempts decreasing by one decimal each iteration. Central and school level supports were shared descriptively based on the data collected from the Central and High School Program Inventories. Individual level interventions were student specific, making summary analysis unfeasible; thus, a sample of students who entered high school below grade level were selected and the interventions listed in their Personal Education Plans (PEPs) were presented.

[1] As of spring 2013, access to economically disadvantaged (ED) student data was restricted and thus these data could not be included in the analyses.

# Results

***What are the demographic characteristics of high school students retained in 2011-12?***

## Demographics

### High School Retention by Student Subgroups and Grade

Table 2 displays the percentage of retained high school students in 2011-12 by grade and student subgroups. In 2011-12, 9.1% of high school students were retained; with the highest retention at grades 9 and 10 (see Table 2). There were also differences by student subgroups.

***Nearly 40% of LEP students and 30% of students with disabilities (SWD) were retained in grade 9 in 2011-12.***

- Retention rates for American Indian, Black/African American, and Hispanic/Latino high school students were approximately four times higher than their Asian and White counterparts.
- Among American Indian and Hispanic/Latino students in grade 9 this difference was even greater, with retention rates nearly five times higher than their White counterparts.
- Retention rates for LEP and SWD students were higher than for student subgroups without these academic risk factors. The retention rate of the LEP student subgroup was approximately four times higher than non-LEP students while the SWD student subgroup was three times that of non-SWD students (non-LEP and non-SWD not shown in Table 2).

**Table 2**

*Percentage of High School Students Retained by Student Subgroup, 2011-12*

| | Grade 9 | | Grade 10 | | Grade 11 | | Grade 12 | | High School | |
|---|---|---|---|---|---|---|---|---|---|---|
| | % | # | % | # | % | # | % | # | % | # |
| American Indian | 26.2% | 16 | 18.5% | 10 | 11.4% | 4 | 2.6% | 1 | 16.5% | 31 |
| Asian | 6.1% | 43 | 1.9% | 12 | 2.9% | 16 | 2.4% | 13 | 3.5% | 84 |
| Black/African Am | 23.0% | 771 | 17.3% | 463 | **13.4%** | 307 | 7.8% | 190 | 16.1% | 1,731 |
| Hispanic/Latino | **26.5%** | 427 | **18.9%** | 251 | 13.0% | 140 | 6.0% | 62 | **17.5%** | 880 |
| Multiracial | 12.2% | 63 | 10.6% | 53 | 8.4% | 34 | 4.1% | 15 | 9.2% | 165 |
| Pacific Islander | 22.2% | 4 | 18.2% | 2 | 0.0% | 0 | **8.3%** | 1 | 14.9% | 7 |
| White | 5.2% | 289 | 4.4% | 230 | 4.2% | 215 | 2.4% | 119 | 4.1% | 853 |
| LEP | **38.9%** | 299 | **26.2%** | 92 | **23.2%** | 58 | **11.5%** | 26 | **29.8%** | 475 |
| SWD | **30.1%** | 566 | **20.5%** | 294 | **16.9%** | 194 | **13.6%** | 137 | **21.6%** | 1,191 |
| All | 13.7% | 1,627 | 9.8% | 1,031 | 7.5% | 718 | 4.4% | 418 | 9.1% | 3,794 |

Data Source: 2011-12 Retention, Promotion, Graduation (RPG) dataset

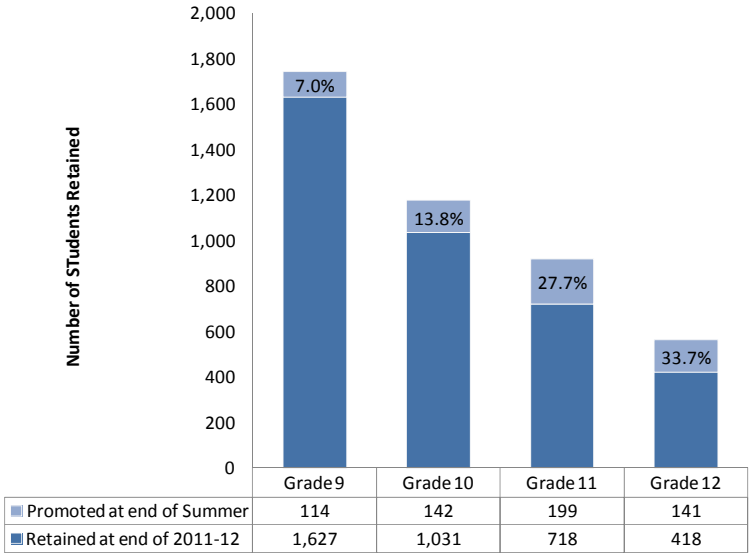
Notes:
1. **Bold** means highest retention percentages; of those, the two highest percentages are circled.
2. LEP and SWD are not mutually exclusive categories; thus, students may appear in more than one of these student subgroups.
3. Decreasing LEP percentages as students progress through high school most likely explains the declining dropout rate of this population.

## Retention by Grade and Summer Promotion Status

Given high school students may be retained for failing only one course, once the missing course is successfully completed the student can be promoted to the next grade level. Figure 2 shows the percentage of retained high school students in 2011-12 who were promoted to the next grade level at the end of summer 2012. This percentage increased by grade level, with students in grade 12 nearly five times more likely to have a summer promotion than students in grade 9[2].

**Figure 2**

*Percentage of Retained High School Students in 2011-12 Promoted at the End of the Summer*




| | Grade 9 | Grade 10 | Grade 11 | Grade 12 |
|---|---|---|---|---|
| Promoted at end of Summer | 114 | 142 | 199 | 141 |
| Retained at end of 2011-12 | 1,627 | 1,031 | 718 | 418 |

Data Source: 2011-12 Retention, Promotion, Graduation (RPG) dataset

## Retention by School

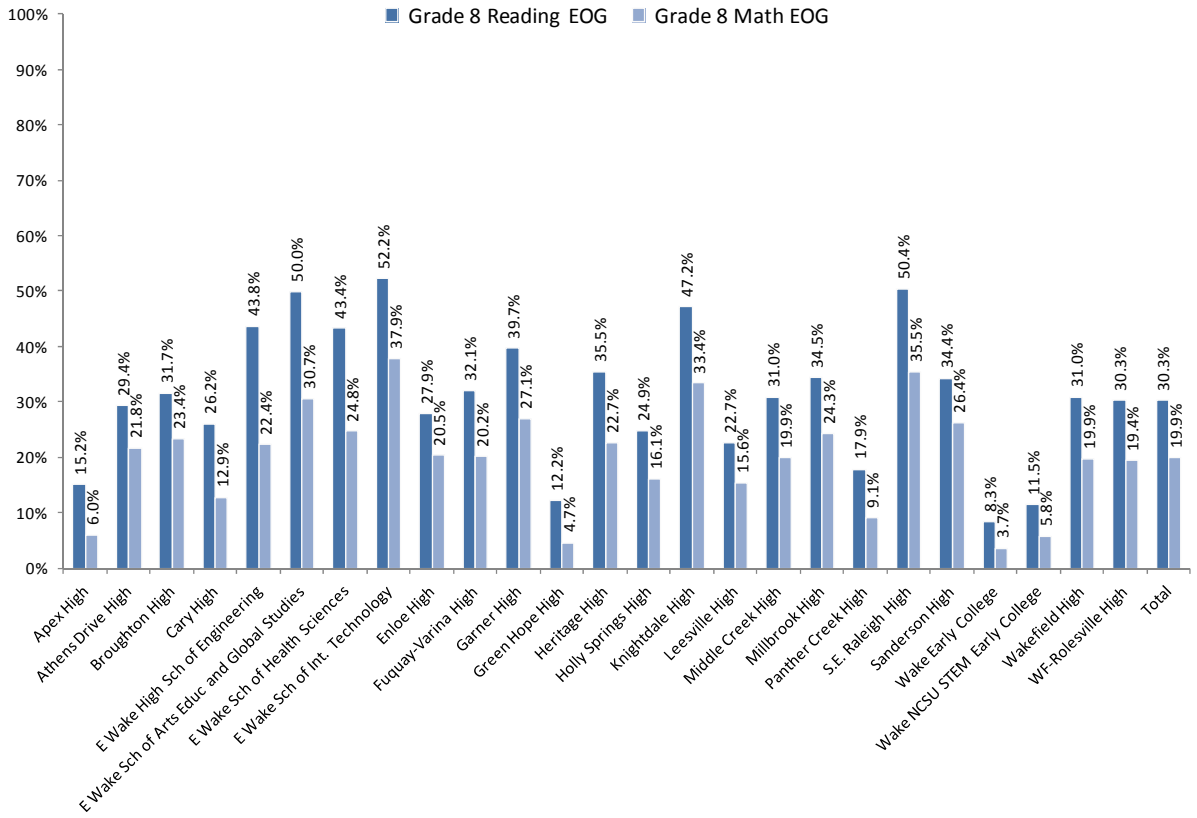
The retention rate in 2011-12 varied considerably across high schools. One factor that may influence school level retention rates is the percentage of students entering high school performing below grade level in reading and mathematics. As Figure 3 depicts, the percentage of students entering high school below grade level based on their grade 8 EOG score in 2011-12 ranged from 8.3% to 52.2% in reading and from 3.7% to 37.9% in mathematics.

***Half of WCPSS' high schools had greater than 30% of students entering below grade level in reading and greater than 20% below grade in mathematics in 2011-12.***

[2] Central service staff indicated this may be due to greater summer offerings for upper grade levels. Additionally, retained students in grade 9 failed more subjects than retained students in grades 10-12 which may also contribute to fewer grade 9 summer promotions.

**Figure 3**

*Percentage of 2011-12 High School Students who Entered High School Below Grade Level in Reading and Mathematics by School*




Data Sources: 2011-12 RPG dataset and WCPSS 2011-12 High School End-of-Year Student Roster

The retention rate varied by high school from 0% to 15.6% of students in 2011-12. To provide further context, Table 3 presents the percentage of students entering school below grade level (based on grade 8 EOG scores) along with the percentage retained by school. There was a positive relationship between the percentage of students entering a high school below grade level and the percentage retained at that school.[3] Some schools with a similar percentage of students entering below grade level had considerably different retention rates, while schools with similar retention rates varied in the percentage of students entering below grade level (further discussion in Appendix A). Further analysis using logistic regression revealed an individual student's prior score was predictive of the student's likelihood of being retained in grade.[4] A chi-square also revealed a significant difference between students above and those below grade level in terms of their likelihood of being retained[5] (see Appendix B). Thus, analysis indicated a relationship between prior achievement and retention both at the student and school level.

[3] A regression confirmed a positive relationship between these variables. For mathematics the R-squared = 0.68 and for reading the R-squared = 0.63.

[4] A logistic regression analysis revealed students below grade level on the grade 8 EOG were significantly ($p < .0001$) more likely to be retained in high school.

[5] Results were similar for students in grade 9 and for students in grades 9-12.

## Table 3

*Percentage of Students Entering High School Below Grade Level and Percentage Retained by School, 2011-12*

| School | Prior Achievement Below Grade LV | | | | Retained in 2011-12 Grades 9-12 | | |
|---|---|---|---|---|---|---|---|
| | Grade 8 Reading EOG | | Grade 8 Math EOG | | | | |
| | % | # | % | # | % | # | Total |
| Garner High | 39.7% | 777 | 27.1% | 530 | 15.6% | 351 | 2,256 |
| S.E. Raleigh High | **50.4%** | 745 | **35.5%** | 525 | 15.5% | 255 | 1,642 |
| Sanderson High | 34.4% | 528 | 26.4% | 409 | 14.5% | 289 | 1,990 |
| Heritage High | 35.5% | 380 | 22.7% | 244 | 13.5% | 177 | 1,312 |
| Broughton High | 31.7% | 548 | 23.4% | 409 | 13.3% | 282 | 2,114 |
| E Wake Sch of Arts Educ & Global Studies | **50.0%** | 158 | 30.7% | 97 | 12.5% | 47 | 377 |
| E Wake Sch of Int. Technology | **52.2%** | 129 | **37.9%** | 94 | 12.5% | 40 | 319 |
| E Wake High Sch of Engineering | 43.8% | 137 | 22.4% | 70 | 11.8% | 42 | 357 |
| Knightdale High | 47.2% | 658 | **33.4%** | 468 | 11.2% | 184 | 1,645 |
| Athens Drive High | 29.4% | 445 | 21.8% | 333 | 11.1% | 210 | 1,894 |
| Enloe High | 27.9% | 654 | 20.5% | 482 | 9.8% | 246 | 2,523 |
| Fuquay-Varina High | 32.1% | 547 | 20.2% | 345 | 9.7% | 190 | 1,958 |
| E Wake Sch of Health Sciences | 43.4% | 140 | 24.8% | 80 | 9.3% | 35 | 376 |
| Leesville High | 22.7% | 387 | 15.6% | 266 | 9.1% | 193 | 2,126 |
| Wakefield High | 31.0% | 624 | 19.9% | 402 | 8.8% | 213 | 2,429 |
| Cary High | 26.2% | 472 | 12.9% | 234 | 8.1% | 180 | 2,230 |
| Millbrook High | 34.5% | 706 | 24.3% | 501 | 8.0% | 206 | 2,566 |
| Middle Creek High | 31.0% | 467 | 19.9% | 301 | 7.0% | 127 | 1,812 |
| WF-Rolesville High | 30.3% | 516 | 19.4% | 333 | 7.0% | 141 | 2,026 |
| Apex High | 15.2% | 312 | 6.0% | 123 | 5.6% | 131 | 2,335 |
| Holly Springs High | 24.9% | 445 | 16.1% | 289 | 4.2% | 88 | 2,075 |
| Panther Creek High | 17.9% | 350 | 9.1% | 179 | 3.9% | 95 | 2,459 |
| Green Hope High | 12.2% | 210 | 4.7% | 81 | 1.4% | 29 | 2,025 |
| Wake Early College | 8.3% | 18 | 3.7% | 8 | 0.0% | 0 | 251 |
| Wake NCSU STEM Early College | 11.5% | 6 | 5.8% | 3 | 0.0% | 0 | 54 |
| **Total** | **30.3%** | **10,506** | **19.9%** | **6,944** | **9.1%** | **3,751** | **41,151** |

Data Sources: 2011-12 RPG dataset and WCPSS 2011-12 High School End-of-Year Student Roster

Note: 1. Data is displayed sorted in descending order by school retention rate.
2. **Bolded** font indicates schools with the highest percentage of students below grade level.
3. Students attending alternative high schools were not shown in this table.

Interpretation Example: More than half (52.2%) and more than a third (37.9%) of students were below grade level in reading and mathematics respectively prior to entering East Wake School of Int. Technology while 12.5% were retained in 2011-12 (20% fewer than were retained at Garner High).

## Prior Retention

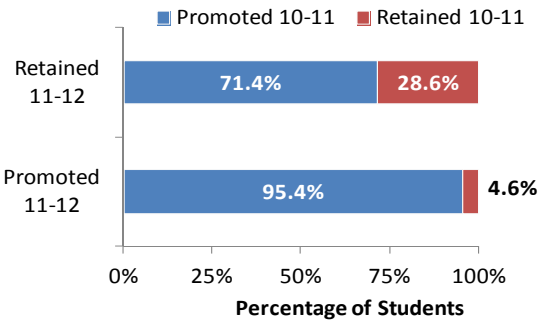
*More than a third of students retained in grade 10 were retained for the 2nd consecutive year*

Figure 4 illustrates that students retained once are much more likely than promoted students to be retained again.

- More than a quarter of high school students retained in 2011-12 were retained for the second consecutive year. While the percentage of 2011-12 retainees also retained the prior year fell well below the majority (28.6%), retainees had a prior retention rate more than six times that of students who were promoted in 2011-12 (4.6%).
- By grade the percentage of 2011-12 retainees who were retained the prior year (i.e., 2010-11) ranged from 21.4% of students in grade 9 to 38.2% of students in grade 10. Thus, more than a third of students retained in grade 10 in 2011-12 were retained for the second year in a row.

**Figure 4**

*Percentage of 2011-12 High School Students by Promotion Status in 2010-11 and 2011-12*



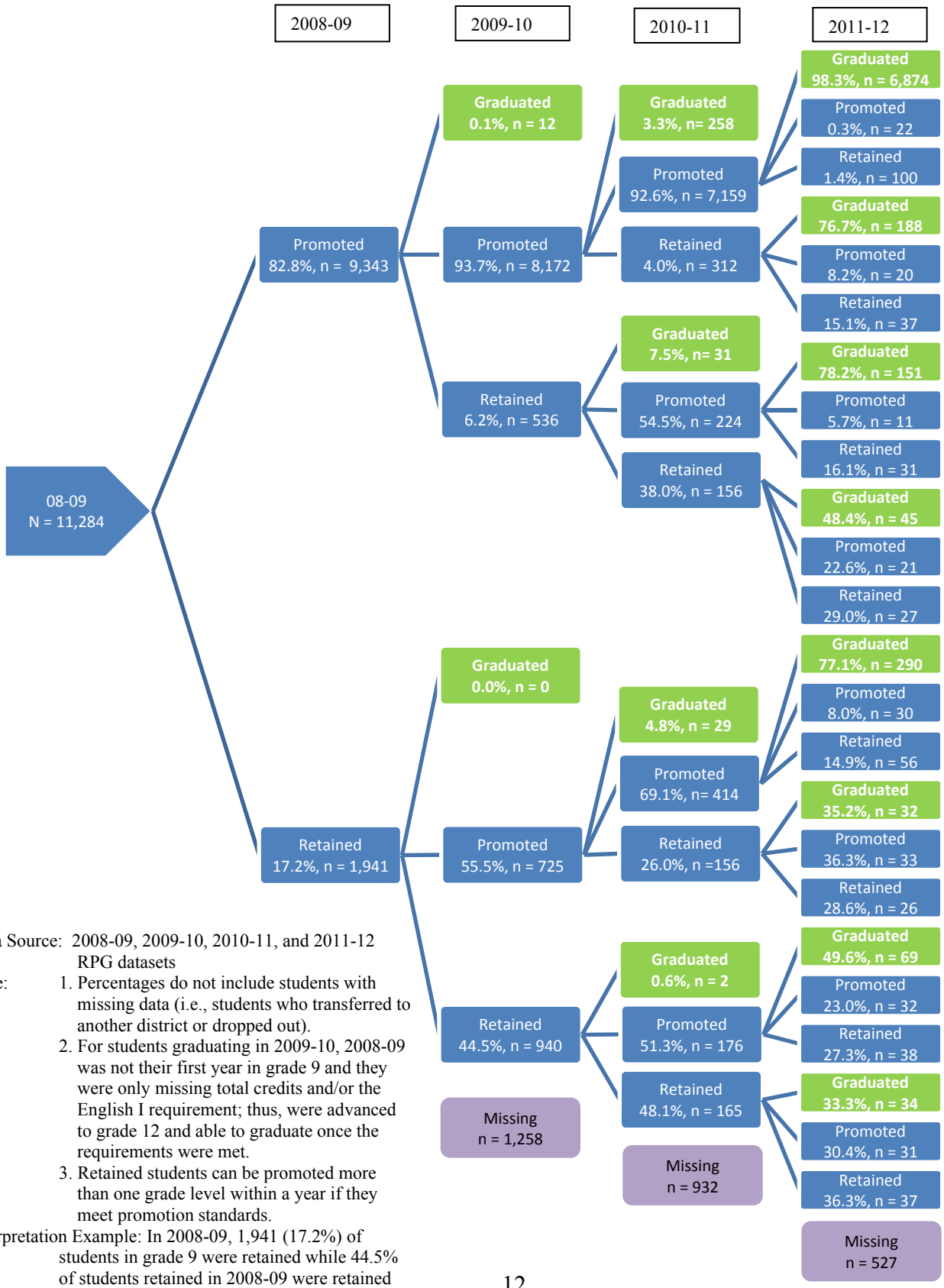

Data Source: 2010-11 and 2011-12 RPG datasets
Note: Promoted students n = 34,353 and retained students n = 3,111

Figure 5 shows the promotion/retention and graduation status of the 2008-09 grade 9 cohort through 2011-12. The number of students missing each year reflects those who either dropped out or transferred out of WCPSS; thus the number of students in the cohort decreases each year. Students who were promoted each of the four years, 98% graduated in 2011-12. Yet for students who experienced retention during the four years, the graduation rate declined with each additional retention. Of the students with one retention, about 77% "caught up" and graduated in four years (2011-12); of those with two retentions, 35% to 50% graduated; of those with three retentions, 33% graduated.[6] The percentage of students graduating at the end of the four years would have been even lower if dropouts (part of the missing counts) were included. Students retained early in high school are more likely to be retained subsequently—a large percentage struggle to succeed each year and are less likely to graduate.

[6] Retained students graduating in 2011-12 represent students who were able to meet graduation requirements and catch up with their cohort. In addition, Figure 5 does not reflect retentions prior to 2008-09.

## Figure 5

*Grade 9 Students by Promotion, Retention, and Graduation Status, 2008-09 to 2011-12*




Data Source: 2008-09, 2009-10, 2010-11, and 2011-12 RPG datasets

Note:
1. Percentages do not include students with missing data (i.e., students who transferred to another district or dropped out).
2. For students graduating in 2009-10, 2008-09 was not their first year in grade 9 and they were only missing total credits and/or the English I requirement; thus, were advanced to grade 12 and able to graduate once the requirements were met.
3. Retained students can be promoted more than one grade level within a year if they meet promotion standards.

Interpretation Example: In 2008-09, 1,941 (17.2%) of students in grade 9 were retained while 44.5% of students retained in 2008-09 were retained again for the second year in 2009-10.

***Which promotion standards did high school students fail to meet in 2011-12?***

## Retention Reasons

***Of retained students in grade 9 in 2011-12:***

***nearly two thirds failed English I;***
***more than half failed;***
***science and social studies; and***
***nearly half failed mathematics.***

Given the high rate of retention at the high school level, it is imperative that the reasons for student retention be examined in order to discover which of the promotion requirements are causing WCPSS students to be retained and therefore not graduate on time and potentially drop out. Nearly half of grade 9 retainees failed mathematics, over 50% failed science and/or social studies courses, and two thirds failed English I. While retentions become less common in the upper grades, this partially reflects lower enrollments at these grades because of students who give up and drop out.

### Retention by Subject

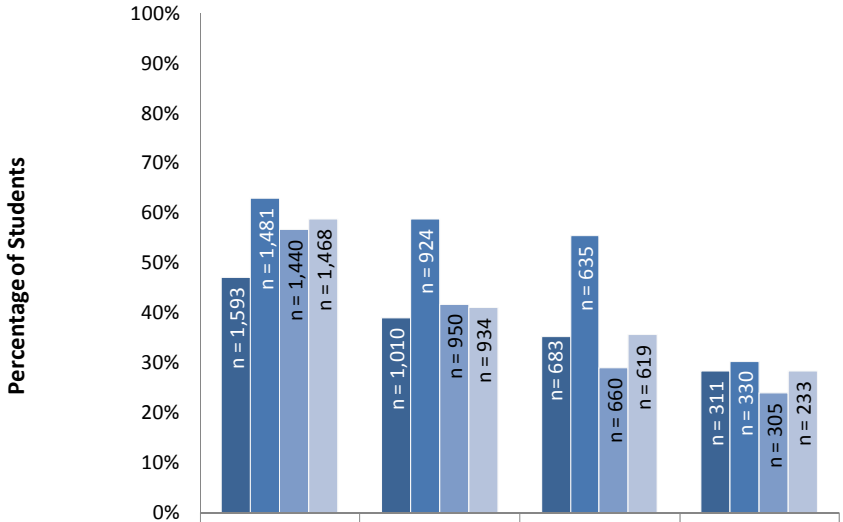
It is helpful to consider which subjects retained students failed in order to isolate the subjects that are proving most difficult. As Figure 6 depicts, among retained high school students in 2011-12, English is the subject most often failed. However, the percentage of retained students failing English decreased with each advancing grade level, with less than a third of retained students in grade 12 failing English IV. Overall, retained students in grade 9 failed more subjects than retained students in grades 10-12.

- While at each grade level English is the subject failed most often, the percentage of retained students failing English ranges from nearly two thirds of students in grade 9 failing English I to less than one third of students in grade 12 failing English IV.

- Approximately, one third of retained students in grades 10, 11, and 12 failed a mathematics credit and nearly half of retained students in grade 9.

- In grade 9, more than half of retained students failed a social studies and science credit compared to approximately 40% of retained students in grade 10 and approximately one third to one quarter of retained students in grades 11 and 12.

**Figure 6**
*Percentage of Retained High School Students*
*By Subject Failed in 2011-12*




| | 9 | 10 | 11 | 12 |
|---|---|---|---|---|
| Failed Math Credit | 47.2% | 38.9% | 35.3% | 28.3% |
| Failed English Credit | 63.0% | 58.9% | 55.4% | 30.3% |
| Failed Social Studies Credit | 56.7% | 41.8% | 28.9% | 23.9% |
| Failed Science Credit | 58.9% | 41.0% | 35.5% | 28.3% |

Data Sources: Historical grade file from NCWise and 2011-12 RPG dataset of actively enrolled students (no dropouts or transfers).

While examining student passing rates by subject it is important to note subject specific requirements for promotion and graduation vary by school calendar and course of study (which is dependent on the cohort in which the student entered high school). Indeed, students entering high school in 2009-10 or later fall under the future-ready core graduation requirements that require students to complete four English credits, four mathematics credits, and three credits in science and social studies. For students entering high school after 2000, but prior to 2009-10, the graduation requirements are four English credits, three mathematics credits, and two credits in science and social studies. Furthermore, the number of courses passed in each subject needed to be promoted to the next grade level also varies by the student's program of study and their school's calendar. Given promotion and graduation requirements include both subject-specific requirements and total credit accumulation, the next section examines credit requirements.

## Retention by Credit Requirement

Another requirement for in-grade promotion for high school is credit accumulation. Thus, Figure 7 depicts the percentage of retained high school students by credit requirement missed in 2011-12. By far, meeting the English requirement is the biggest stumbling block for students to promotion. If those who failed only their English credit are combined with those who failed English and another core course, approximately two thirds of students failed their English requirement in grades 9-11 (and 44% at grade 12). There were some differences by grade level:

***The English requirement is the biggest stumbling block to promotion for our students.***

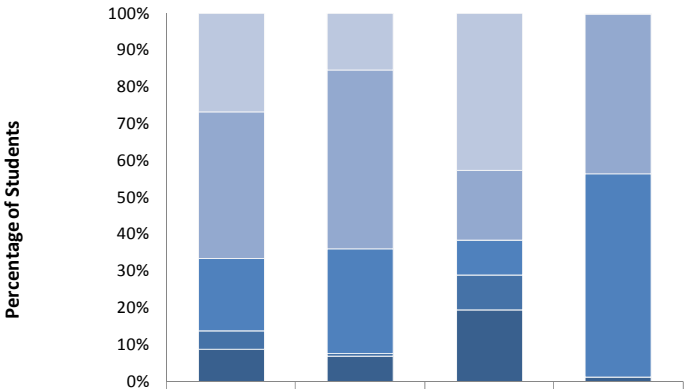
***

***1 in 5 retained students in grade 9 passed English I, but were missing credit in mathematics, science and/or social studies.***

- retained students in grade 9 were less likely than those in grade 10 to be missing credit(s) in core course(s) beyond English;
- retained students in grade 11 were most likely to have missed only their English requirement, with 42.6% missing English III;
- more than half of the students retained in grade 12 had English IV, but were missing credit(s) in other core course(s).

**Figure 7**

*Percentage of Retained High School Students*
*By Credit Requirement Missed in 2011-12*




| | 9 n=1,292 | 10 n=827 | 11 n=561 | 12 n=307 |
|---|---|---|---|---|
| Missing English Credit | 26.9% | 15.6% | 42.6% | 0.3% |
| Missing English & Other Core | 39.8% | 48.4% | 19.1% | 43.3% |
| Missing Other Core Credit | 19.5% | 28.3% | 9.5% | 55.1% |
| Insufficient Credits | 5.0% | 0.9% | 9.5% | 0.0% |
| Other | 8.8% | 6.9% | 19.4% | 1.3% |

Data Sources: Historical grade file from NCWise and 2011-12 RPG dataset
Note: Other refers to students retained in 2011-12 who met English, core course, and credit requirements.

***What was the availability of and participation in supports for academically weak students?***

## Academic Supports

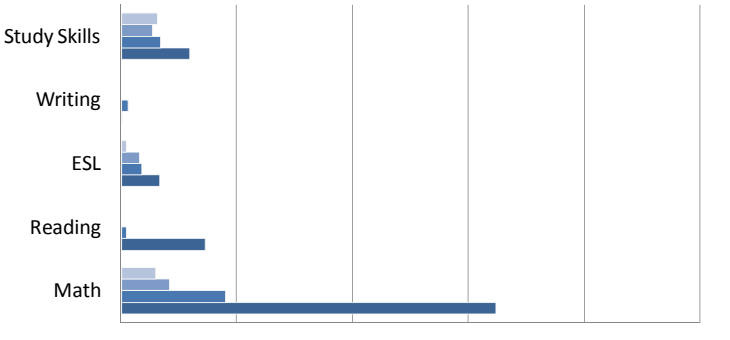
### Support "Bridging" Courses

***While three fourths of ninth-grade students who entered high school below grade took a math support course, fewer than 15% enrolled in a reading support course and even fewer in other support courses.***

Support "bridging" courses have been designed to build students' skills to increase the chance for success in other high school courses. The support courses that were available to students in grade 9 included: reading interventions (Competency Intervention-Reading, Integrated Reading, and Intro to High School English); mathematics interventions (Introductory Mathematics and Foundations of Algebra); Writing Support (Structured Writing, Intro to HS Writing, and Essentials of English); and Study Skills (Study Skills and Study Skills & School Success). Support courses primarily targeted students in grade 9 entering high school below grade level; and this was reflected in the higher enrollment at this grade level. Despite the focus on grade 9, however, only the mathematics support courses had high enrollment among students in grade 9.

**Figure 8**

*Percentage of Retained Students Scoring Below Grade Prior to High School In Support Course by Subject Area and Grade*




| | Math | Reading | ESL | Writing | Study Skills |
|---|---|---|---|---|---|
| Grade 12 | 6.0% | 0.0% | 1.0% | 0.0% | 6.2% |
| Grade 11 | 8.4% | 0.0% | 3.1% | 0.0% | 5.5% |
| Grade 10 | 18.1% | 1.0% | 3.7% | 1.2% | 6.8% |
| Grade 9 | 64.9% | 14.5% | 6.6% | 0.2% | 11.8% |

Data Sources: Historical grade file from NCWise and 2011-12 RPG dataset
Note: Students below grade level prior to high school based on Grade 8 EOG scores: reading based on Reading EOG; mathematics based on Math EOG; and ESL, writing, and study skills based on being below on either Reading or Math EOG

***Retained Students versus Academically Similar Students Not Enrolled in Support Courses.***

Although Table 4 shows students not enrolled in a support course experienced lower retention rates than students participating in reading, ESL, and mathematics support courses, further analysis of students enrolled in reading, ESL, or study skills support courses and matched groups of similar students, revealed no significant difference. The only exception within the matched analysis was a significantly higher ($p<.0001$) percentage of students participating in the mathematics support courses retained following their participation.[7] While a propensity match reduces bias by accounting for match criteria, it does not account for non-observed differences between groups not included in the model (e.g., middle school grades, test-taking skills, motivation, and economically disadvantaged (ED) status).

**Table 4**

*Grade 9 Students Scoring Below Grade Prior to High School*
*2011-12 Promotion Status after Participation in Support Courses*

| Below Grade on Grade 8 Based on | Support Course in 2011-12 | | Promotion Status at the End of 2011-12 | | | | |
|---|---|---|---|---|---|---|---|
| | | | Promoted | | Retained | | Total |
| | | | Number | Percent | Number | Percent | Number |
| *Reading EOG* | Reading | Yes | 217 | 60.5% | 142 | 39.6% | 359 |
| | | No | 2,311 | 73.5% | 834 | 26.5% | 3,145 |
| | ESL | Yes | 98 | 64.9% | 53 | 35.1% | 151 |
| | | No | 2,430 | 72.5% | 923 | 27.5% | 3,353 |
| | Writing | Yes | 12 | 85.7% | 2 | 14.3% | 14 |
| | | No | 2,516 | 72.1% | 974 | 27.9% | 3,490 |
| | Study Skills | Yes | 302 | 72.8% | 113 | 27.2% | 415 |
| | | No | 2,226 | 72.1% | 863 | 27.9% | 3,089 |
| *Math EOG* | Math | Yes | 677 | 54.8% | 558 | 45.2% | 1,235 |
| | | No | 826 | 73.2% | 302 | 26.8% | 1,128 |
| | Study Skills | Yes | 182 | 65.0% | 98 | 35.0% | 280 |
| | | No | 1,321 | 63.4% | 762 | 36.6% | 2,083 |

Data Sources: 2011-12 Retention, Promotion, Graduation (RPG) dataset and WCPSS 2011-12 High School End-of-Year Student Roster

## Centrally Supported High School Programs

In addition to the support courses for entering high school students, 10 programs that offered academically weak high school students support were supported by WCPSS' central services

[7] A propensity match analysis was conducted for students participating in a support courses. Students were matched on grade 8 EOG reading and mathematics scores, grade 8 EOG reading and mathematics academic change scores as well as LEP and SWD status.

staff (based on the 2012-13 Program Inventory).[8] Table 5 displays the centrally supported programs targeting high school students with weak academic performance. Half of the centrally supported programs for high school students reported in the 2012-13 Program Inventory offered targeted support to LEP students. It should be noted that prior WCPSS studies have found that the Sheltered Instruction Observation Protocol (SIOP) was also beneficial to other student subgroups at the elementary and middle school levels (Bulgakov-Cooke, 2013; Paeplow, 2011).

**Table 5**

*Centrally Supported Programs Targeting High School Students with Weak Academic Performance*

| Program Name | Targeted Group | Strategy |
|---|---|---|
| SuccessMaker | Low Achievers in Math, Low Achievers in Reading, English Language Learners, Students with Mental Disabilities | SuccessMaker Collaborate is a K-8 learning program that captures the imagination of students and teachers by fostering creativity and cooperation while providing differentiated instruction on any brand of interactive whiteboard. |
| Academy of Reading | Students who have gaps in their foundational reading skills. Typically those scoring in the high level 2 to low level 3 EOG/EOC range | Provides software and teacher support to develop foundational reading skills in students to the level of automaticity. |
| Accelerated Learning Centers | Students at risk of failure | Students who fail a regular course can retake the course in an online environment. |
| Competency Intervention Reading | Students with a trend of EOG scores that are in the mid to high level 2 range | Not provided |
| ESL Academy | LEP students with periods of interrupted education or newcomers to WCPSS with limited English upon entry | Focuses on developing the four domains (listening, speaking, reading, and writing) in English with an added emphasis on improving literacy skills and building mastery of middle school curriculum. |
| ESL Summer School | Students at levels 1, 2, 3, 4 on the previous spring's ACCESS test | Designed to prevent regression of English language skills for LEP students by providing additional support during the summer. |
| ESL Track Out/ After School Program | Students in need are identified at the school level | Extends LEP students' exposure to English by providing homework assistance and targeted instruction. Schools identify LEP students most in need of services. |
| NovaNet | Students struggling with a subject or who have failed and need to recover a credit | Computer-based instruction in specific courses. Teacher monitors student progress and maintains lab. |
| Sheltered Instruction Observation Protocol (SIOP) | LEP & SWD in regular classrooms (part of core instruction) | Teaches grade level content in a way that is understandable for English Language Learners while at the same time promoting their English language development. Provides professional development training and on-site coaching for teachers. |
| Title III Coaches | LEP students in regular class | Utilizes SIOP approaches |

Data Source: 2012-13 Central Program Inventory

Note: Although these programs are centrally supported, the programs are not available at all schools.

[8] Although the Program Inventory was not captured in 2011-12, the 2012-13 Program Inventory indicated the year the program began and therefore was applicable to the current study.

## School Level Programs

Another way in which students may be supported is through school-based programs that provide intensive services for selected groups of students at Tier II or Tier III (see Table 6). Table 6 includes school-based programs that may be offered at one or more WCPSS high schools.

**Table 6**

*School-Based Programs Targeting High School Students with Weak Academic Performance*

| Program Name | Response to Instruction Tier of Service | Targeted Subject | Main strategy or strategies used in the program | Time of Day | Session Length | # of Days per week | Needs Addressed |
|---|---|---|---|---|---|---|---|
| CONCERT | "Tier II" Supple-mental Services for Selected Group | Core subjects, Technology, Field Trips and Arts | CONCERT is a Board managed by people outside the school system through a 21st century grant. It is for underrepresented students and provides them with after school tutoring and unique field trips. | After School | 90 minutes | 5 | Provides underrepresented students after school tutoring and unique field trips. |
| Hetero-geneous grouping/ scheduling | "Tier II" Supple-mental Services for Selected Group | Social Studies, English Lang. Arts | Heterogeneous grouping of academic and honors students within selected classes, i.e., English classes and World History classes | During School Day | NA | Each sem-ester/ NA | Provide a rigorous educational experience for all students. |
| Corrective Reading | Not provided | English Lang. Arts | Research-based direct instruction teaching model. Direct teaching of critical skills and strategies to accelerate progress. Frequent interactions between teacher and students to maximize time spent learning. Teacher modeling & demonstration to boost student confidence and success. Guided and independent practice and application to gradually transfer responsibility for learning. Adequate practice and review to develop deep mastery of skills and concepts. | During School Day | Not provided | 5 | Corrective Reading provides intensive, sustained direct instruction to address deficiencies in decoding and comprehension. |
| Garner Evening Program | "Tier III" Intensive Services for Select Group | Core subjects, Curriculum Assistance | Alternative Education Setting for special education students serving long term suspensions. | After School | 180 minutes | 4 | Allows for continued learning while students are suspended from regular classes |

Data Source: 2012-13 High School Program Inventory
Note: Core subjects = Math, Science, Social Studies, English Language Arts; CA = Curriculum Assistance

In addition to the school-based programs targeting students at Tier II and Tier III, many high schools also offer supports to all students (i.e., Tier I). These programs include working lunch (i.e., Power lunch or Smart lunch), after school tutoring (e.g., Success Lab), online K-12 courses (e.g., Apex Learning), and Saturday School (see Appendix C for additional information on these programs).

***Are there intervention plans for students considered for retention? If yes, are they available centrally?***

**Individual Level Support**

Individual student level interventions are available centrally via the Electronic Access to Student information (EASi) application. Students who fail to meet grade level promotion standards are required to have a Personal Education Plan (PEP) (High School PEP Indicators, 2013). Figure 9 shows that less than half of the 2011-12 high school population who were retained in 2010-11 had a PEP in reading or mathematics. The percentage of students retained in 2010-11 with an active PEP in high school varied by grade level. As shown in Figure 9:

- Approximately 40% of students in grades 9 and 10.
- Approximately one third of students in grade 11.
- Less than 20% of students in grade 12.

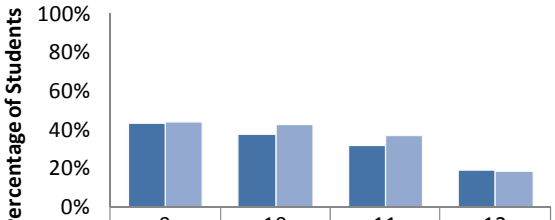
***Among high school students retained last year (2010-11) fewer than half of those in grade 9 had a PEP in reading (42.8%) or mathematics (43.5%)***

***

***This percentage decreased as grade level increased.***

**Figure 9**

*Percentage of High School Students Retained in 2010-11 With a PEP for Reading or Mathematics*




| | 9 n = 694 | 10 n = 725 | 11 n = 498 | 12 n = 548 |
|---|---|---|---|---|
| Reading | 42.8% | 37.5% | 31.7% | 18.8% |
| Math | 43.5% | 42.3% | 36.5% | 18.2% |

Data Source: PEP Intervention Monitoring Report

It should be noted that approximately 30% of students without a PEP were SWD and thus would have an Individualized Education Plan (IEP). Furthermore, additional individualized plans may

have been recorded on students' report cards rather than within the centrally available EASi system.

The type of interventions listed within the EASi system is highly individualized and therefore are not easily summarized. Due to the nature of these data, in order to examine the type of interventions offered to students within their PEPs, a sample of students' PEPs was examined. Table 7 displays examples of individual student interventions listed within the students' PEPs.

**Table 7**

*Examples of Individual Student Level Interventions for High School Students with Weak Academic Performance Promoted from Grade 9*

| **Reading Intervention Strategies of Promoted Students** | **Session Length** |
|---|---|
| After-school tutorial | 60-90 minutes |
| Student uses reading & writing strategies (e.g., proofread work for grammar errors, summaries of texts, questioning strategies, graphic organizers, create flashcards of vocabulary words, annotate work) | 30-90 minutes |
| Verbally share information for assessments and then be asked to write it out after discussion | 40 minutes |
| Daily sign-off of homework assignments | 5 hours |
| Organized notebook to show for frequent teacher checks | 5 minutes |
| Study Island, academic advisory, class time, and teacher assigned extra-class tutoring | 30-45 minutes |
| Check SPAN weekly for grades and missing assignments; check Blackboard daily; complete on-line tutorials (WCPSS Success Series, chompchomp.com, and/or brightstorm.com) | 30 minutes |
| Lunch tutorial after absence | 20 minutes |
| Online vocabulary resources, Frayer models | 30 minutes |
| Self-selected texts | 30 minutes |
| Meet w/ teacher | 45 minutes |
| Remediation offered, as necessary, during Pride Period. | 20 minutes |
| Weekly conference or contact with parent. | 5-30 minutes |
| Redirection within the classroom when student gets off task. | 90 minutes |
| Student will take notes on Study Lesson Plan. | 60-90 minutes |
| Extended time on assignments | 45 minutes |
| When enrolled in this course, student will be given an opportunity to retake tests/quizzes. | 20 minutes |
| Peer tutoring | 60-90 minutes |

Data Source: PEP Intervention Monitoring Report
Note: Interventions displayed in this table had beginning dates ranging from September 2011 to May 2012.

## Conclusions and Discussion

High school students represent the majority of retained students with the highest proportion in grades 9 and 10. Although half of WCPSS' high schools had greater than 30% of students entering below grade level in reading and greater than 20% below grade in mathematics, there was variance by school in terms of the number of students retained. While there is a positive relationship between the percentage of students entering a high school below grade level and the percentage retained at that school, variation in the retention rate for schools with similar academic populations indicate the need to examine grading practices and supports offered to students entering high school below grade level. A summary of existing research focused on improving graduation is provided in *Best Practices to Promote High School Graduation* (Baenen, 2009).

It is important to note that prior research has found retaining students earlier in their school career is not the solution to correcting high school retentions and may negatively impact students' high school completion. Jacob and Lefgren (2009) studied grade 8 students performing below grade level and determined that in-grade retention in elementary school increased the probability these students would drop out of high school. The current study found that while nearly all high school students who were promoted each of the four years considered had graduated at the end of the four years, for students who experienced retention during that time, the 2011-12 graduation rate declined with each additional retention. These findings indicate that although many retained students are able to catch up with their peers and graduate at the end of four years, many were unable to do so (approximately one quarter of students retained once, half to nearly two thirds of students retained twice, and two thirds of students retained three times did not graduate at the end of the four years examined). The falling behind of students retained multiple times is particularly concerning given Rumberger's (1995) findings that in-grade retention is the most powerful predictor of whether a student will drop out of school.

This study found high schools have resources for students performing below grade level in the form of support or "bridging" courses, central and school supported programs, and individual interventions via PEPs. However, the supports were limited in capacity or in which schools had the service and/or were underutilized, with the exception of mathematics support courses. An examination of high school support or "bridging" courses revealed that students entering high school below grade level in reading lacked adequate support to ensure their successful transition to high school. Indeed, although three fourths of retained students in grade 9 failed English I, less than 15% of those below grade in reading prior to high school were enrolled in a literacy support course. Moreover, less than half (ranging by grade level from 43% to 19%) of 2011-12 high school students who were retained the prior year (2010-11) had a PEP in high school with "Literacy/English/Language Arts" listed as the area of need. Even if we account for the fact that approximately 30% of students without a PEP were SWD and thus would have an IEP, there remains some retained students who do not have an individualize plan available in EASi. Moreover, English which is a major stumbling block does not seem to have adequate support (i.e., during the day electives or interventions) or adequate scheduling of these supports.

Although an examination of participation rates in the central and school supported programs was not possible due to limited availability of centralized data, the central and high school program inventories revealed a small number of programs devoted to high school students performing below grade level. Thus, given the lack of adequate support courses and individual interventions for previously retained students; and the fact that the English requirement has proven to be the biggest stumbling block to promotion for our students, further examination of the availability of, and participation in, these programs is needed.

Although three fourths of ninth-grade students who entered high school below grade level had enrolled in a mathematics support course, matched group analysis revealed that the retention rate for these students remained significantly higher than academically similar students not enrolled. While this could be the result of unidentified selection criteria, the effectiveness of these support courses should be examined further. Similar to reading, fewer than half (ranging by grade level from 44% to 18%) of students who were retained the prior year (2010-11) had a PEP in high school with "Math" listed as the area of need (approximately 30% of students without a PEP were SWD and would have had an IEP). Furthermore, there was a lack of school and central programs beyond coursework aimed toward students struggling with mathematics. Thus, the placement process and/or capacity of supports provided to high school students struggling with mathematics and literacy should be further examined. Specific recommendations regarding the strengthening of supports to our high school students are presented in the next section.

A related issue that deserves further investigation is the coordination and adjustment of course schedules between grade 8 and grade 9. Grade 9 schedules are completed prior to the availability of end-of-year tests and final grades. The extent to which high school schedules are adjusted for students who fail to pass middle school courses or who score below grade level, and the extent to which middle school staff know what supports are available in grade 9, are questions that remain to be answered.

## Recommendations

The findings of this study indicate a need to examine the placement process for incoming ninth grade students who score below grade level in grade 8 as well as whether capacity issues exist which prevent students from placement in appropriate supports. English in grades 9-11also rises to the top of the list as a stumbling block to graduation, with different or additional supports needed. Finally, many LEP students coming into high school need different supports than currently are available or used if they are to graduate. For additional information regarding LEP students see *Limited English Proficient Students: Progress of 2008-09 High School Cohort* (2013). A discussion of the implications of the findings with key central staff led to the following recommendations.

***Identify and utilize early indicators to determine students in need of extra support.*** Staff should use early warning indicators (e.g., Fs in core subjects in grade 8, quarterly grades, benchmark data, excessive absences more than 10 days, etc.) to identify students who need support early in the school year rather than after these students have been retained to prevent a semester (or year

depending on the length of the course) from being lost. Provide intervention such as extra time and support focused on individual students' needs as soon as struggling students are identified (Smink, 2001). School staff should also review and follow the recommendations for which students receive a PEP as outlined in the *High School PEP Indicators and Timeline* (2013).

***Identify barriers to student learning and available high school supports for struggling students.*** In order to prevent student failure which results in in-grade retention, it is necessary to consider what barriers exist to student learning. School staff should identify the individual needs of students with low-performance (i.e., below grade level on 8th grade EOG and/or course failure) in order to reduce their likelihood of in-grade retention. Research suggests that all low achievers be promoted with additional instruction such as tutoring; Smink (2001) suggests creating either a bridging program or summer program to enable students to catch up with their peers (Smink, 2001). The literacy support "bridging" courses offered within WCPSS included Competency Intervention-Reading, Integrated Reading, and Intro to High School English; however, given the low participation rate it would be helpful to determine if the lack of use is a capacity or placement issue. Additional examination of reasons for low enrollment is needed (e.g., parent request, capacity, and/or scheduling). High school staff should utilize grade 8 benchmark data and/or classroom grades when determining students for placement into "bridging" or support courses. Additionally, student schedules should be reviewed following the release of EOG data and schedules should be adjusted to ensure students who need additional support in grade 9 are enrolled into "bridging" or support courses.

***Review availability, usage, and effectiveness of middle school supports for struggling students.*** Given only 1% of students were retained in grade 8 in 2011-12 (Paeplow, 2013) and half of WCPSS' high schools had greater than 30% of students entering below grade level in reading and greater than 20% below grade in mathematics, middle school staff should review availability and use of support to students performing below grade level. It is important to remember that in light of the negative student outcomes associated with retention, retaining students in middle school is not the solution to reducing high school retention. However, providing struggling students effective support during middle school and/or as they transition to high school would bolster their academic performance in high school.

***Monitor interventions to assess fidelity of implementation as well as successful student outcomes.*** In order to ensure the programs and interventions students are provided are working, it is necessary to include "strong quality controls and monitoring to ensure that the extra help and time are working" (Smink, 2001, p. 6). Thus, interventions at the middle and high school levels should be monitored to determine which provide evidence of improved student outcomes.

***Examine why some schools retain more than others with similar incoming populations.*** Consider factors that may contribute to school variation including inconsistent grading practices and differential availability of supports. Schools with academically challenging populations which were more successful in promoting their students to the next grade level should be examined to determine if they could serve as models for schools with similar populations and high retention rates.

***Improve staff collaboration across school levels.*** High school staff should build partnerships with feeder middle schools in order to strengthen the academic skill level of entering 9th grade students. Furthermore, closer collaboration with middle school staff will enable sharing of additional data that can be used to identify students during the spring of 8th grade (prior to the release of EOG scores) who may need support as they transition to high school.

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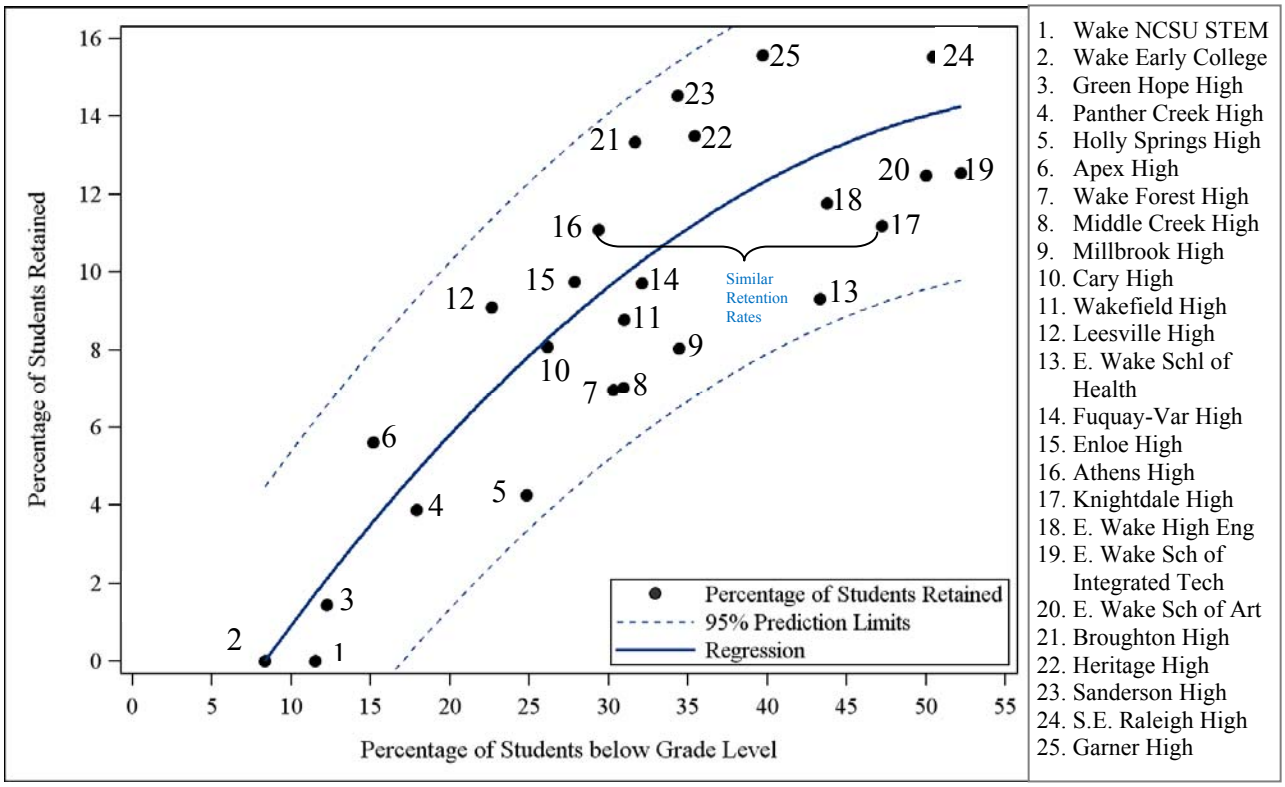
## Appendix A

*Percentage of Retained High School Students in 2011-12*
*By Percentage of Students Entering High School Below Grade Level in Reading*




Data Sources: 2011-12 RPG dataset and WCPSS 2011-12 High School End-of-Year Student Roster

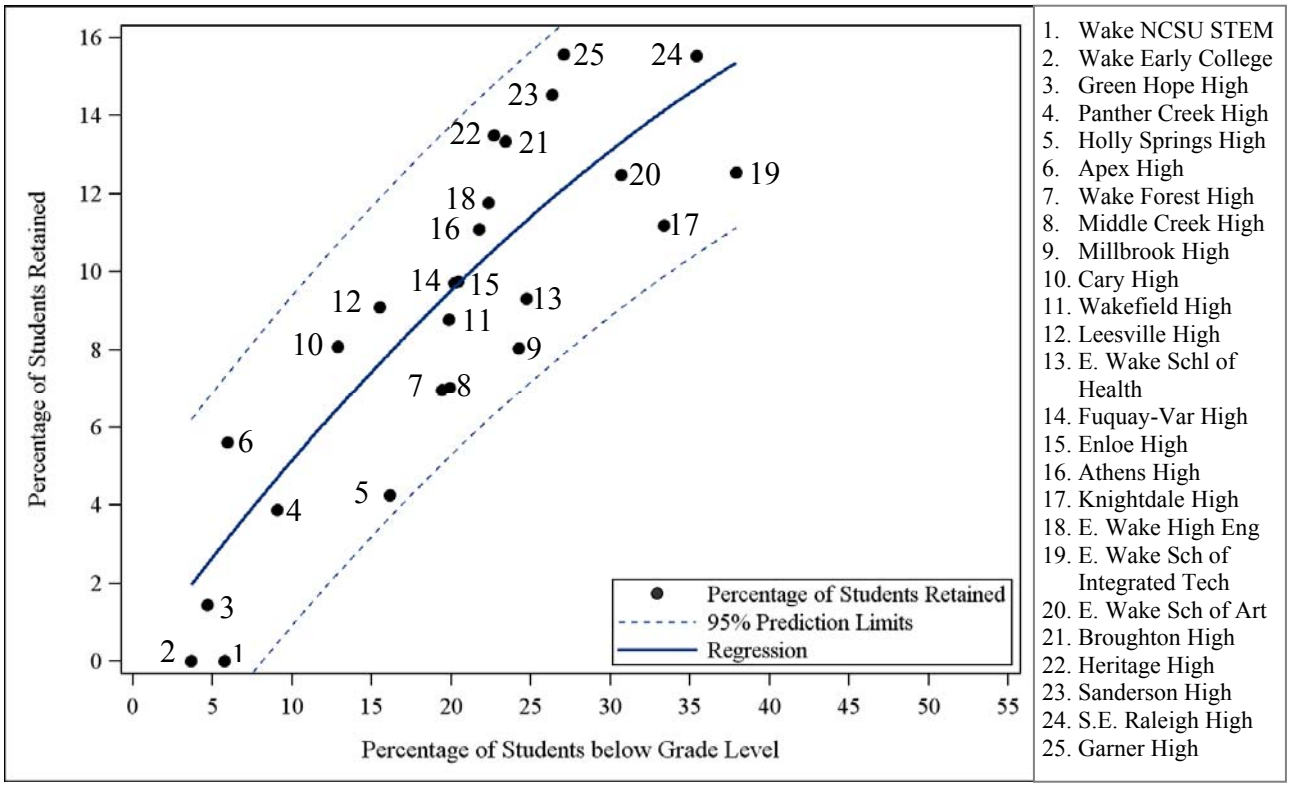
Note 1: The 95% prediction limits band "displays the confidence limits (CLI) for individual predicted values for each observation" (Matange & Heath, p. 147).

Note 2: Rsquare = 0.68 thus 68% of the variance in school retention rate is explained by the model. Percentage of students below grade in mathematics = 4.193935 + 1.69 * Percentage of students retained.

Interpretation Example: Although Knightdale High and Athens High had a similar retention rate (11%), 47.2% of students at Knightdale High entered high school below grade level in reading compared to 29.4% of students at Athens High

## Appendix A cont.

*Percentage of Retained High School Students in 2011-12*
*By Percentage of Students Entering High School Below Grade Level in Mathematics*




Data Sources: 2011-12 Retention, Promotion, Graduation (RPG) dataset and WCPSS 2011-12 High School End-of-Year Student Roster

Note 1: The 95% prediction limits band "displays the confidence limits (CLI) for individual predicted values for each observation" (Matange & Heath, p. 147).

Note 2: Rsquare = 0.63, Percentage of students below grade in mathematics = 12.08663 + 1.97 * Percentage of students retained.

## Appendix B

*Summary of Logistic Regression Analysis for Variables Predicting In-Grade Retention in 2011-12*

| Variable | B | SE B | Wald | Sig. | Odds Ratio | Direction of Odds (increase/ decrease) |
|---|---|---|---|---|---|---|
| **Reading** | | | | | | |
| Grade 9 (N=10,139) | | | | | | |
| Grade 8 Reading EOG Level Below Grade | 1.81 | 0.07 | 590.61 | <.0001 | 6.11 | ↑ |
| Limited English Proficient | 0.68 | 0.11 | 40.97 | <.0001 | 1.98 | ↑ |
| Students with Disabilities | 0.66 | 0.08 | 71.58 | <.0001 | 1.94 | ↑ |
| Grades 9 -12 (N=33,448) | | | | | | |
| Grade 8 Reading EOG Level Below Grade | 1.56 | 0.05 | 1124.04 | <.0001 | 4.76 | ↑ |
| Limited English Proficient | 0.93 | 0.08 | 130.32 | <.0001 | 2.54 | ↑ |
| Students with Disabilities | 0.67 | 0.05 | 168.85 | <.0001 | 1.95 | ↑ |
| **Mathematics** | | | | | | |
| Grade 9 (N=10,205) | | | | | | |
| Grade 8 Math EOG Level Below Grade | 2.09 | 0.05 | 3366.47 | <.0001 | 8.07 | ↑ |
| Limited English Proficient | 0.88 | 0.11 | 67.57 | <.0001 | 2.40 | ↑ |
| Students with Disabilities | 0.57 | 0.08 | 48.92 | <.0001 | 1.76 | ↑ |
| Grades 9 -12 (N=33,840) | | | | | | |
| Grade 8 Math EOG Level Below Grade | 1.79 | 0.05 | 1553.20 | <.0001 | 5.98 | ↑ |
| Limited English Proficient | 0.95 | 0.08 | 142.94 | <.0001 | 2.58 | ↑ |
| Students with Disabilities | 0.56 | 0.05 | 115.63 | <.0001 | 1.75 | ↑ |

Data Sources: 2011-12 Retention, Promotion, Graduation (RPG) dataset and WCPSS 2011-12 High School End-of-Year Student Roster

Note 1: A Forward Selection Logistic Regression was run.

Note 2: Odds Ratio > 1 = increased odds of retention; odds ratio = 1 means odds were unchanged; and odds ratio < 1 = decreased odds of being retained.

Interpretation Example: Grade 9 students who were below grade level in grade 8 mathematics had increased odds (odds ratio 8.07 > 1) of being retained.

# Appendix C

*School-Based Programs Targeting High School Students with Weak Academic Performance*

| Program Name | Response to Instruc-tion Tier of Service | Targeted Subject | Main strategy or strategies used in the program | Time of Day | Session Length | # of Days per week | Needs Addressed |
|---|---|---|---|---|---|---|---|
| Working Lunch (Power lunch, Smart lunch) | "Tier I" All students | All subjects | Students make up work, take tests, work on projects, do homework, and receive general remediation and/or enrichment during scheduled lunch | Lunch | Based on need of student | 5 | Students who are struggling/ failing class because of missing assignments. Allows time for students to receive tutoring during school hours. |
| Success Lab | "Tier I" All students | All subjects | Pairing tutors with students. Teachers send work for students in Success Lab. | After School | 120 minutes | 3 | Providing opportunities for students to receive targeted academic assistance after school. |
| ASAP After School Assistance Program | "Tier I" All students | Core subjects | To provide academic support to any student who needs it in the specified curricular areas. | After School | 60 minutes | 2 | Academic support |
| Attendance Validation Program | "Tier I" All students | All subjects | 1. Form positive relationship with students, parents, and teachers<br>2. Create a contract<br>3. Fill in holes in the grade book and get credit for class | After School | 90 minutes | 2 | Students are able to make up instructional time and work to gain credit for class |
| Test correction and recovery credit programs | "Tier I" All students | All subjects | Provide a chance for students to improve grades by demonstrating mastery and relearning content taught previously | Before /After School, Lunch, Weekends, During School Day | Varies | 5 | •Help students pass class(es)<br>•Provide second chance opportunity for academic success<br>•Gives students a chance to demonstrate mastery and prepares the student(s) for future assessments<br>•Increased contact with student and teacher<br>•Communicate importance of academic success to students |
| Tutoring Programs/ Peer Mentoring Programs | "Tier I" All students | All subjects | Students are provided time during the school day to meet with a peer tutor for academic assistance. | Before School, After School, Lunch | 22 minutes | 1 | Provide academic assistance to students struggling to achieve academic success/ provide free tutoring to students needing tutoring services |
| Apex Learning | Not provided | Core subjects | Online K-12 courses in mathematics, science, English studies, social studies, Romance languages, the fine arts, health and physical education, and Advanced Placement. | During School Day | Not provided | 5 | Students have the opportunity to earn new credit. |

| Program Name | Response to Instruc-tion Tier of Service | Targeted Subject | Main strategy or strategies used in the program | Time of Day | Session Length | # of Days per week | Needs Addressed |
|---|---|---|---|---|---|---|---|
| Trojan Zone | "Tier I" All students | All subjects | Students come to the Trojan Zone where a counselor is always present during lunch. The student may receive guidance counseling for personal/social matters or regarding academic concerns. The student may also meet with a peer tutor or simply report there to make up missed work for specific classes. | Lunch (Power lunch, Smart lunch) | 15-30 minutes | 5 | Peer tutoring and guidance counseling provided during student lunch period. |
| Saturday School | "Tier I" All students | All subjects | Students attend Saturday School to make up time missed due to excessive days absent, excessive tardies, discipline intervention, and academic recovery | Weekends | 150 minutes | 1 | Student attendance, discipline intervention, and academic recovery |
| In School Suspension | "Tier I" All students | Core subjects, Technol-ogy | Academic Support, Mentoring and Individual Counseling, | During School Day | 90-420 minutes | 5 | Discipline/ Intervention, Academic Recovery, Student Attendance |
| After School Tutorial | "Tier I" All students | All subjects | Students receive academic support for any subject area by staff member representatives from each subject area. | After School | 120 minutes | 5 | Academic support, excessive attendance issues, and discipline intervention |

Data Source: 2012-13 High School Program Inventory
Note: Core subjects = Math, Science, Social Studies, English Language Arts