

## Strategic Plan | Vision 2020, Wake County Public Schools Literature Review for Measuring Metrics

### College and Career Readiness

#### Rationale of WCPSS Metrics and Review of Literature

Since 2010, most states in the U.S. have adopted college- and career-readiness standards (Darling-Hammond, Wilhoit, & Pittenger, 2014; U.S. Department of Education, 2017) because a major goal of the American educational system has been that all high school students are expected to be ready for college or career when they graduate (U.S. Department of Education, 2010). Educational policy and educational research literature suggests two reasons why college and career readiness has become such a prominent issue. First, the future economy increasingly depends on postsecondary education and training (Maruyama, 2012). More than 70% of the fastest-growing job opportunities between 2006 and 2016 required further education after high school (Barnes & Slate, 2014). Second, alarming evidence shows that a large percentage of American high school graduates are not well prepared for college or the workforce (Gaertner, Kim, DesJardins, & McClarty, 2014; Jackson, & Kurlaender, 2014). For example, a report published by the U.S. Department of Education (2010) showed that the proportion of newly admitted college students who took remedial coursework is four out of ten, and at two-year institutions this proportion is one out of two. The report also indicated that many employers believed high school graduates were not well prepared for a job. In a different report, ACT showed that only 23% of graduating seniors in 2009 were ready for college (ACT, 2009).

“In North Carolina, students are considered career and college ready when they have the knowledge and academic preparation needed to enroll and succeed, without the need for remediation, in introductory college credit-bearing courses in English language arts and mathematics within an associate or baccalaureate degree program” (Hunt Institute, 2015, p. 1). *(Because college readiness and career readiness are commonly defined as one construct, this review considers them together rather than separately.)*

This definition is a static description of what students should know and be capable of doing by the end of high school, but college and career readiness is also a process that begins before high school (Wimberly & Noeth, 2005). Wimberly and Noeth’s (2005) study noted that college readiness should begin in middle school. Furthermore, Wimberly and Noeth suggested schools should “help inform students and their parents of the students’ progress toward college readiness” (p. ix). Early indicators would call attention to off-track students (Thum & Matta, 2015) so teachers and parents could provide additional academic and career support.

WCPSS has embraced a dynamic approach to show how well students progress toward college and career readiness at key time points before high school, and also the extent to which these students are college and career ready upon graduation. More specifically, WCPSS college and career readiness metrics include students' performance at key time points before entering high school (third, fifth, and eighth grade), percentage of students meeting ACT benchmarks, high school graduation, eligibility for college admission, college enrollment rate, industry-recognized credentials, and internship completion.

**Performance before high school.** Two considerations prompted WCPSS to look at students' performance before high school. First, research has shown that students' performance from fifth to ninth grade strongly predicts whether students will meet ACT college readiness benchmarks (Thum & Matta, 2015; Gavin, 2011). Second, identifying students who are off-track prior to high school allows ample time for educators and parents to take action. For example, when teachers and parents are informed that some of their third graders performed lower than expected, they have multiple years to help these students catch up before they reach high school.

**Benchmarks during high school.** After students enter high school, WCPSS continues tracking their performance from ninth through 12th grade with college readiness benchmarks. The ACT college readiness benchmarks provide a cut-off score that predicts whether a student will succeed in college (ACT Inc., 2013). Table 1 shows the ACT benchmarks by subject and corresponding college courses in which students will have a predicted 50% likelihood to earn a B or higher, or 75% chance to earn a C or higher.

Table 1. ACT College Readiness Benchmarks by Subjects

College Course	Subject	ACT EXPLORE Grade 8	ACT EXPLORE Grade 9	ACT PLAN	The ACT Test
English Composition	English	13	14	15	18
College Algebra	Mathematics	17	18	19	22
Social Sciences	Reading	16	17	18	22
Biology	Science	18	19	20	23

Source: ACT, Inc. (2013). What are the ACT college readiness benchmarks? Retrieved from <http://www.act.org/content/dam/act/unsecured/documents/benchmarks.pdf>

Although ACT college readiness benchmarks have become a critical tool to assess whether a student is college ready, a few limitations should be noted. First, the ACT benchmarks consider students' performance only in standardized tests developed by ACT, Inc. In fact, ACT

researchers (Mattern et al., 2014) suggested broadening the definition of college readiness because benchmarks based only on a few standardized assessments are problematic (Maruyama, 2012). Second, ACT benchmarks focus on college readiness without clarifying how career readiness fits into the college readiness benchmarks. According to Conley (2012), college and career readiness overlap but are not the same constructs. Third, college readiness does not guarantee a student will choose to attend college. Actual college enrollment decisions involve other factors, such as whether a student graduates from high school and is financially prepared. Therefore, beyond ACT benchmarks WCPSS also considers GPA, graduation, eligibility for college admission, and actual college enrollment rate.

For the **GPA benchmark** of college readiness, WCPSS adopted the middle point (3.0) between the National Center for Education Statistics (NCES) Index and the College Board. The NCES index of college readiness in high school is a GPA of 2.7 or higher (Greene & Winters, 2005), while the College Board suggested a cut-off of 3.3 (Wiley, Wyatt, & Camara, 2010).

**Graduation** from high school is a prerequisite for college application in most cases. In the United States, the average high school graduation rate was 72% in 1991 and 71% in 1992 (Greene & Winters, 2005). By 2009, the high school graduation rate was 75.5% across the country and 78.4% in North Carolina (Chapman, Laird, Ifill, & KewalRamani, 2011). A high school graduation rate is not the sole indicator of teaching and learning within a school district, but it can show how many students meet one of the college application prerequisites. Tracking the high school graduation rate of WCPSS allows various stakeholders to compare the district's rate with the national trend.

ACT or SAT test scores, high school graduation, and high school GPA together might be good indicators of whether students are eligible for college admission. However, they are not the same as college admission requirements. College admission requirements are still necessary in order to determine if a student is eligible for college with a certain ACT or SAT score and GPA. WCPSS uses the North Carolina Community College admission requirements as criteria for determining the percentage of its **graduates who are eligible for college**.

A student who is ready and eligible will not necessarily attend college. Insufficient financial aid and poor understanding of financial aid applications are additional barriers (Hahn, & Price, 2008; Oliverrez, 2006) that might dissuade some high school graduates from going to college. In the face of rising tuition, some high school graduates may not be willing to borrow enough to pay for college (Perna, 2008). In the past, financial considerations led some academically high-performing students to decide not to attend college (Hahn & Price, 2008). For this reason WCPSS tracks the actual **college enrollment** rate immediately after high school graduation and two years later.

“Being college ready and being **career ready** are similar, but not necessarily the same” (Conley, 2012, p. 4). WCPSS college and career readiness metrics acknowledge the overlap and interrelationship between the two concepts but also highlight the importance of technical and career education (also referred to as vocational education). The importance of workforce skills development in high school has been well supported by educational research. Griffith and Wade’s (2001) study showed that students who participated in work and career-oriented education in high school had better employment outcomes after college. Other researchers found that career-related programs in high school helped improve students’ academic performance, including mathematics skills (Stone, Alfeld, & Pearson, 2008). Educational institutions and businesses generally agree that industrial or employability skills should be taught in high schools (Zinser, 2003). Beginning in the late 1960s, thousands of schools in the U.S. adopted “Career Academies” with the purpose of preparing students for college and career (Brand, 2009; Stern, Dayton, & Raby, 2010). For those students who decide not to attend a 2-year or 4-year college after high school, “Career Academies” can help them to connect what they are learning to the real world as well as help them to obtain a job after they graduate. The career skills and knowledge gained are particularly important (Bangser, 2008) because high school could be their last opportunity for schooling.

### **How Does WCPSS Measure College and Career Readiness?**

The specific indicators of WCPSS college and career readiness are presented in Table 2. For students younger than high school age, WCPSS includes the percentage who are proficient in North Carolina End-of-Grade exams of 3<sup>rd</sup>, 5<sup>th</sup>, and 8<sup>th</sup> grades. While students are in high school, the WCPSS indicators show the percentage meeting ACT benchmarks and the percentage with a 3.0 GPA or higher. Upon graduation, WCPSS reports what percentage of high school graduates meet North Carolina community college admission requirements and the proportion who later enroll in two-year or four-year colleges. Additionally, the WCPSS college and career readiness measure counts the number of students who acquire industry credentials, certificates and specific skills, and who complete job shadowing, internships and apprenticeships during high school.

Table 2. WCPSS College and Career Readiness Measure

Indicator	Description
Performance Before High School	Percentage of students proficient at key time points (3 <sup>rd</sup> , 5 <sup>th</sup> , and 8 <sup>th</sup> grade)
Benchmarks During High School	Percentage of high school students meeting college readiness benchmarks on ACT
	Percentage of high school students with GPA of 3.0 or higher
Eligibility for College	Percentage of graduates eligible to attend a North Carolina community college without having to take remedial coursework
College Enrollment	Percentage of graduates enrolling in 2- or 4-year college after graduation
	Percentage of graduates still enrolled in 2- or 4-year college after two years
Career Readiness	Students acquiring industry credentials, certificates and specific skills during high school
	Students completing job shadowing, internships and apprenticeships during high school

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