Multiple Measures of College and Career Readiness: What Does the Evidence Suggest?

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Executive Summary

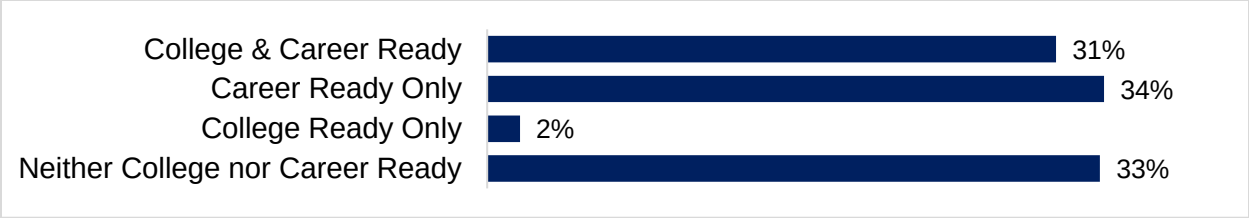
This study investigated critical issues related to the use of distinct assessments and performance standards for evaluating college and career readiness, with direct relevance to high school accountability systems. A large sample of high school students was examined, all of whom completed both a college readiness assessment (the ACT) and a career readiness assessment (ACT WorkKeys).

The ACT test and WorkKeys assessments are designed to measure related but distinct constructs. Both assessments evaluate math, reading, and data interpretation skills and show alignment with college and career readiness standards. The ACT test assesses knowledge, skills, and concepts typically taught in high school and relevant for college coursework, whereas the WorkKeys assessments focus on foundational skills within workplace contexts. The ACT emphasizes academic skills, while WorkKeys highlights how well skills are transferred to professional environments. Both assessments are predictive of college outcomes such as first-year college GPA, as well as work outcomes.

This study examined how much additional information is gained by combining results from the two tests in high school accountability systems. Student performance was evaluated according to independently established performance levels for college and career readiness, each determined through standard-setting processes tailored to postsecondary education and workforce requirements, respectively.

Key findings include:

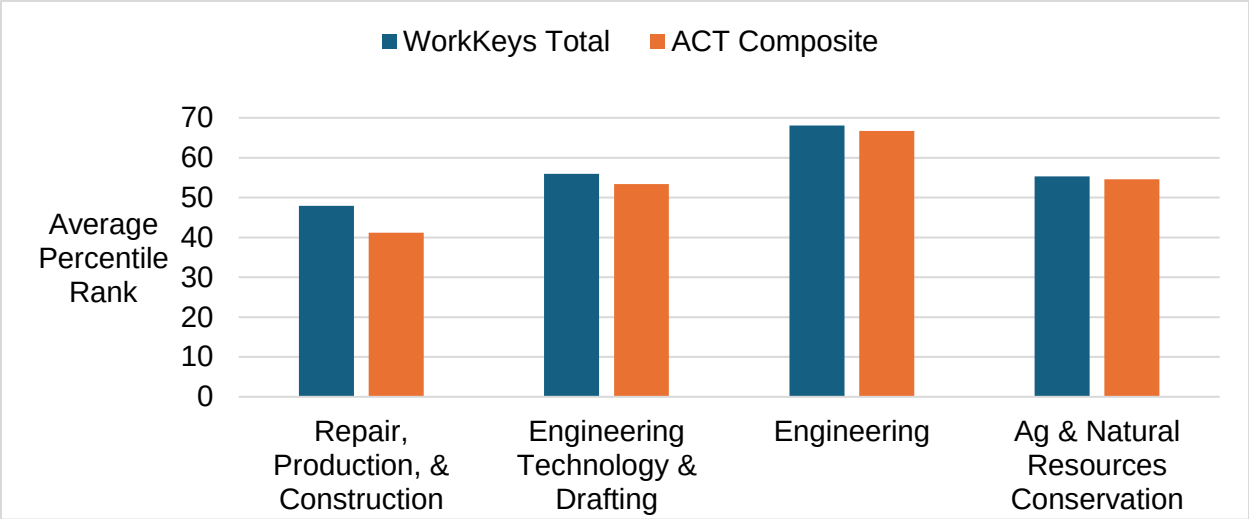
- Performance on the ACT test is strongly associated with performance on the WorkKeys assessments, but each assessment provides some unique information about college or career readiness.
- High school students are generally split between three groups: Those who are college and career ready, those who are career ready but not college ready, and those who are neither college ready nor career ready. The chart below shows the percentage of students in each category based on performance levels for the ACT Composite score and WorkKeys NCRC.



Note: ACT Composite scores of 20 and higher correspond to state proficiency standards and WorkKeys NCRC levels of Silver and higher indicate career readiness.

- Many students who are nearly proficient in ELA, math, or science have the foundational skills needed for career readiness. The chart below shows the percentage of students earning a Silver or higher NCRC, among those who were nearly proficient according to state performance standards for the ACT test.

- Students with occupation plans in the skilled trades tend to perform better on a career readiness test, relative to a college readiness test. The chart below shows groups of planned occupations where students performed better on the career readiness test relative to the college readiness test.



- While having one assessment and one set of performance standards offers efficiency and is accepted for federal accountability, having distinct assessments and performance standards for college and career readiness offers at least three benefits:
  - Greater relevance of high school assessments for all students, regardless of their college or work plans.

- Greater accuracy for measuring and reporting college and career readiness, reflecting the reality of different standards for college and career readiness.

- Benefits to students for obtaining college and career readiness credentials, opening opportunities for employment, work training programs, college admissions, and scholarships.

Introduction

The primary goals of K-12 education systems include preparing students for college, careers, or military service. Reflecting these goals, states have adopted content and performance standards that reference both college and career readiness. For most states, the same content standards, performance standards, and high school assessments are used for measuring both college and career readiness. This approach offers assessment efficiency and meets the Every Student Succeeds Act (ESSA) requirements for measuring academic achievement using an assessment that is aligned to the state's content standards. Moreover, evidence to support claims around both college and carer readiness has been documented for some assessments, including the ACT® test.

An alternative approach to high school assessment uses different assessments – and different performance standards – to measure college and career readiness. This approach has been used by some states, with results from the career readiness assessment only counting towards ESSA's fifth indicator of school quality or student success.

In this report, we examine key questions about using different assessments and different performance standards for college and career readiness. We examine data for high school students who have taken the ACT test and ACT WorkKeys® assessments. We analyzed the data to address the following questions:

1) To what extent are college readiness (ACT) and career readiness (WorkKeys) measures correlated?

2) How many students are college-ready, career-ready, both, or neither?

3) Do students with certain postsecondary plans or interests perform relatively better on career readiness relative to college readiness?

Methodology

In this section, we describe the measures, sample, and data used to address the research questions. We begin by describing measures of college and career readiness and different performance standards that have been established for those measures. Next, we describe the sample of high school students that are the basis of this study. Then, we describe the analytic procedures that are used to address each research question.

Measures of College and Career Readiness

The ACT College Readiness Benchmarks and State ACT Performance Levels

The ACT test measures academic achievement and college readiness in English, reading, math, science, and writing. It is designed to determine how skillfully students solve problems, grasp implied meanings, draw inferences, evaluate ideas, and make judgments in subject-matter areas important to success in college (ACT, 2025a, page 1). The ELA score summarizes performance on the English, reading, and the writing test; the STEM score summarizes performance on the math and science tests; and the Composite score summarizes performance on the English, math, and reading tests.[1]

The ACT College Readiness Benchmarks are the ACT scores that represent the level of achievement required for students to have a 50% chance of obtaining a B or higher and about a 75-80% chance of obtaining a C or higher in common, first-year credit-bearing college courses. Using data collected from hundreds of colleges across the United States, Benchmarks have been established for the ACT section test scores, as well as the STEM and ELA scores (Allen, 2013; Mattern et al., 2015; Radunzel et al., 2017). Table 1 lists the Benchmarks and the courses used to establish them.

Table 1. ACT College Readiness Benchmarks

ACT Score	College Courses	Benchmark
English	English Composition I	18
Math	College Algebra	22
Reading	American History, Other History, Psychology, Sociology, Political Science, Economics	22
Science	Biology	23
STEM	Calculus, Chemistry, Biology, Physics, Engineering	26
ELA	English Composition I, American History, Other History, Psychology, Sociology, Political Science, Economics	20

While the ACT test was designed as a college readiness assessment, it also provides interpretations of career readiness. For example, the ACT Progress Toward Career Readiness Indicator predicts an examinee's ACT WorkKeys National Career Readiness Certificate™ (NCRC®) level using the ACT Composite score. Further, ACT Composite scores are predictive of future earnings (Mattern & Cruce, 2021). The ACT tests knowledge and skills aligned to common frameworks for both college and career readiness standards (ACT, 2025a, page 14).

Several states use the ACT as their high school accountability test, fulfilling assessment and reporting requirements under the Every Student Succeeds Act (ESSA). These states convened educators and other stakeholders from across their state to set performance standards for ACT ELA, math, and, in some cases, science scores. The standard setting procedures used the

[1] Prior to the 2025-2026 testing year, the Composite score from the legacy ACT test included science. Because the science test is now optional, the Composite score no longer includes science.

same college outcomes data that was used to derive the ACT College Readiness Benchmarks, comparative state and national data, state-specific performance data, and the judgments of the state's standard setting panelists.[2]

These standard setting events resulted in state-specific performance levels for English language arts (ELA), math, and science. Most states adopted four performance levels for each subject, with the level 3 "proficient" cut score also representing college readiness. Table 2 summarizes the performance levels that have been set for ACT scores. The typical score range is based on the median cut scores across states that have set ACT performance standards for federal accountability using four performance levels.[3] Table 2 also shows examples of the names that have been adopted for each performance level.

Using equipercentile linking of ACT ELA scores and ACT English + Reading (E+R) scores, Table 2 also shows the E+R score ranges that are most comparable to the ELA score ranges. As described later, the E+R score ranges are used to approximate ELA performance levels because most students in our sample did not take the optional ACT Writing test and thus do not have an ELA score.

Table 2. Typical ACT Score Performance Levels from State Standard Setting

Performance Level	Typical ACT Score Range		
	ELA (E+R)	Math	Science
1. Below Proficient, Below Basic, Novice, Developing	1-13 (2-28)	1-15	1-16
2. Approaching Proficient, Basic, Near Proficient, Approaching	14-18 (29-39)	16-18	17-20
3. Proficient, Meeting	19-23 (40-51)	19-25	21-25
4. Above Proficient, Advanced	24-36 (52-72)	26-36	26-36

Performance levels can also be considered for the ACT Composite score. One approach for categorizing ACT Composite scores is based on the typical state ACT score performance levels provided in Table 2. Corresponding ACT Composite cut scores can be approximated by using the typical cut scores for English + Reading and math, using the formula Composite = (English + Reading + Math)/3. Using this approach, the ACT Composite score ranges are 1-14 (Level 1), 15-19 (Level 2), 20-25 (Level 3), and 26-36 (Level 4).

Another approach for categorizing ACT Composite scores is based on the ACT Progress Toward Career Readiness Indicator. While based on a test and a Composite score that are primary used to measure college readiness, this indicator predicts students' level of career readiness. Five levels have been established using Composite score ranges of 1-12 (non-

[2] For a description of the empirical standard setting approach, see Camara, Allen, & Moore, 2017. For reports documenting standard settings in three states see Montana Office of Public Instruction, 2017; Moore & Kapoor, 2002; and Moore, Steedle, & Camara, 2017.
[3] As of fall 2025, six states for ELA, seven for math, and five for science have set state-specific ACT performance levels for federal accountability.

qualifier), 13–15 (Bronze), 16–20 (Silver), 21–26 (Gold), and 27–36 (Platinum) (ACT, 2025b). The Gold level also aligns with the ACT Benchmarks, as the average of the English, reading, and math Benchmarks is 21.

The ACT WorkKeys National Career Readiness Certificate

The ACT WorkKeys assessments measure foundational skills required for success in the workplace. The assessments use passages taken from workplace situations and all passages are evaluated for workplace realism. The National Career Readiness Certificate (NCRC) is a portable, evidence-based credential earned by completing three WorkKeys multiple-choice assessments: Applied Math, Graphic Literacy, and Workplace Documents.

The NCRC certifies essential work skills required for success across a wide range of industries and occupations. It measures the skills that people use when applying mathematical reasoning and problem solving to work-related problems, to read and use written documents to do a job, and to comprehend information presented in graphical format and then use the information and solve a problem (ACT, 2025c, page 1).

Performance on each WorkKeys assessment is reported using scale scores (ranging from 65 to 90) and level scores (categorized into six levels). These score levels were determined through a standard setting process and are reported as 0, 3, 4, 5, 6, and 7 (ACT, 2025c, pages 110-114). The NCRC is issued based on the lowest level score achieved across the three assessments: examinees obtaining level 6 or 7 in all assessments receive a Platinum NCRC; those with a minimum level score of 5 receive a Gold NCRC; a minimum score of 4 results in a Silver NCRC; and a minimum score of 3 qualifies for a Bronze NCRC. This paper examines career readiness using the five levels of NCRC attainment: Non-qualifier (below Bronze), Bronze, Silver, Gold, and Platinum. Individuals who possess a Silver NCRC have the essential foundational skills needed for the majority of jobs in the U.S. (Lefebvre & Steedle, 2019). While a Silver or higher NCRC indicates that students have the foundational skills for most occupations, many of those occupations still require some education beyond high school or on-the-job training. More details on the NCRC are provided here.

Across the United States, individuals take WorkKeys to demonstrate their foundational workplace skill level and qualify as career ready, receive specific skill-related training, or qualify for a specific job. For the two-year period ending July 2025, over 800,000 individuals took the three assessments required for the NCRC. Most examinees (82%) were high school students, while 14% were adults with no education beyond high school, 3% were adults with some college but less than a bachelor's degree, and 1% were adults with a bachelor's degree or higher. High school students have an opportunity to earn an NCRC through WorkKeys testing programs administered by states, districts, and workforce agencies. Some states provide both the ACT test and WorkKeys assessments through school-day testing programs.

While the NCRC is primarily used to certify career readiness, there is also evidence of utility related to college readiness. For example, a recent study analyzed data from a sample of first-year college students and found that NCRC level was predictive of first-year cumulative grade point average, with a correlation of 0.41 (Conway, 2023). Another study found that the three

WorkKeys assessments required for the NCRC measure critical thinking and problem-solving skills aligned to the College and Career Readiness Standards for Adult Education (ACT, 2025c, page 19). Further, the American Council on Education (www.acenet.edu) recommends that postsecondary institutions award college credit for individuals who have earned a Silver, Gold, or Platinum NCRC.

Study Sample

We analyzed a large sample of 358,920 students who took the ACT and WorkKeys assessments within one academic year of one another, between fall 2022 and summer 2025. Data from each student's most recent ACT test attempt and most recent WorkKeys attempts (Applied Math, Graphic Literacy, and Workplace Documents) were collected for analysis. For 68% of the sample, the most recent ACT test attempt occurred during spring 11th grade ACT state contract testing. Because very few students had taken the enhanced ACT without the science test, we restricted the sample to students who had taken the ACT test with science.

To compare college and career readiness, assessments should be administered closely together. For example, if one test was taken a year after the other, we would be concerned that academic growth could skew the results by inflating performance on the second test. For 32% of the sample, the ACT test was taken at least one month after the WorkKeys tests; 5% completed both assessments within the same month; and 63% took the WorkKeys tests at least one month after the ACT test. To evaluate college and career readiness at comparable time points, the data was weighted to balance the proportion of students who took the ACT before the WorkKeys Assessments with those who took the WorkKeys Assessments before the ACT. After weighting, the mean number of months between tests was 0.0.

Table 3 presents descriptive statistics for the sample both prior to and following the application of weighting. Additionally, for comparative purposes, Table 3 includes descriptive statistics for a reference population: all 11th grade students assessed during the school day under ACT state contracts across 22 states in spring 2025. The reference population can be interpreted as being like the U.S. population of 11th grade public school students.

The weighted sample was 54% female and 46% male, with the following racial/ethnic composition: 49% White, 30% Black, 11% Hispanic, 5% Two or more races, 2% Asian, 1% Native American, and < 0.5% Native Hawaiian/Other Pacific Islander. Students were included from 30 states, with most of the sample coming from one of six states (NC, LA, AL, MS, AR, and KS). At the time of ACT testing, most students were 16 (20%), 17 (58%), or 18 (19%) years old, with 1% 15 or younger and 1% 19 or older. Relative to the reference population, the sample had a larger percentage of students who are female or Black, and a lower percentage of students who are male or Hispanic. The sample had more students who were 18 years old when they took the ACT and fewer students who were 16 years old when they took the ACT. (Note that the age discrepancy is due to the sample data using students' last ACT test, while the reference population is based on spring 11th grade testing).

Table 3. Comparing the Sample to the ACT Contract Testing Population

Characteristic	Value	Sample %	Weighted Sample %	Population %
Gender	Female	51.9	53.6	48.3
	Male	47.6	45.8	48.8
	Other/PNR	0.5	0.6	2.9
Race/ethnicity	Asian	2.2	2.4	3.1
	Black	28.9	30.3	13.9
	Hispanic	12.9	11.4	21.0
	Native American	1.0	0.9	1.4
	Native Hawaiian/OPI	0.2	0.2	0.4
	Two or more races	5.3	5.2	6.2
	White	48.8	48.9	51.1
	PNR	0.6	0.7	3.0
Age at ACT test	<16	0.5	0.7	0.1
	16	27.9	20.3	35.3
	17	57.5	58.2	59.8
	18	13.3	19.4	4.5
	>18	0.9	1.3	0.3
ACT Composite Range	1-12	14.3	12.6	16.2
	13-15	28.2	26.6	24.6
	16-20	32.5	33.4	29.3
	21-26	18.1	19.5	20.8
	27-36	6.9	7.9	9.2

Note. OPI = Other Pacific Islander, PNR = prefer not to respond, ACT Composite range is based on the ACT Composite score without science and matches the updated ACT Progress Toward Career Readiness Indicator.

The weighted average ACT Composite score (without science) was 17.9, with a standard deviation of 5.3. Prior to weighting, the sample's average ACT Composite score was 17.5 with standard deviation of 5.2. One effect of the weighting was to slightly increase the average achievement of the sample. For the reference population, the mean ACT Composite score was 18.3, with a standard deviation of 5.4. The percentage of students at different ACT Composite score levels was similar for the sample and reference population. These findings indicate that the sample closely aligns with the overall academic achievement level of 11th grade students in ACT contract states.

Most students in the sample (81%) did not take the optional writing test, and so the ACT ELA score was not available for these students. Because the correlation of the English + Reading score and ELA score is very high (0.95), we chose to approximate ELA performance levels using the English + Reading scores. As mentioned earlier, equipercentile linking was used to find the English + Reading score ranges that correspond to the typical state ELA performance levels (Table 2).

Comparison of College and Career Readiness

To address the first research question (To what extent are college readiness and career readiness measures correlated?), we examined correlations between ACT scores and WorkKeys scale scores. The ACT scores included in the correlation analysis included the section test scores (English, math, reading, science), the English + Reading score (representing ELA performance), and the Composite score. The WorkKeys scores included the scale scores for Applied Math, Graphic Literacy, and Workplace Documents, as well as a total score that was obtained by summing the three scale scores (we refer to this as the WorkKeys total score).

To address the second research question (How many students are college-ready, career-ready, both, or neither?), we examined the percentage of students scoring at different ACT and NCRC performance levels. The ACT performance levels included:

- Number of ACT College Readiness Benchmarks met (0, 1, 2, or 3-4)
- Typical ACT ELA state performance levels (using English + Reading, from Table 2)
- Typical ACT math state performance levels (from Table 2)
- Typical ACT science state performance levels (from Table 2)
- ACT Composite score ranges corresponding to the typical ELA and math state performance levels
- ACT Composite score ranges corresponding to the ACT Progress Toward Career Readiness Indicator

We calculated three types of percentages:

- Marginal percentages: The percentage of examinees scoring at each level of college readiness, and the percentage scoring at each level of career readiness.
- Cell percentages: The percentage of examinees scoring at each combination of college and career readiness levels.
- Conditional career readiness percentages: The percentage of examinees scoring at each level of career readiness, among those scoring at each level of college readiness.

We also highlight the percentage of students earning Silver or higher NCRC. Silver was chosen as a marker of career readiness because of the substantial differences between Silver and Bronze in terms of jobs qualified for and average earnings (Lefebvre & Steedle, 2019).

Analysis of Relative Performance

Measuring Relative Performance

To address the third research question (Do students with different postsecondary plans or interests perform relatively better on career readiness relative to college readiness?), we derived a measure of how well students performed on the career readiness assessment (WorkKeys) relative to the college readiness assessment (the ACT).

First, we calculated the sample percentile ranks of the ACT Composite score and the WorkKeys total score. Then, we calculated the difference between the two percentile ranks ($PR_{WorkKeys} - PR_{ACT}$). This difference score measures the degree that a student performed **relatively** better on career readiness (WorkKeys) than college readiness (the ACT), using the sample as the normative basis. Positive differences indicate stronger relative performance on career readiness and negative differences indicate stronger relative performance on college readiness.

Occupation Plans, College Plans, and Demographics

When students register for the ACT test, they have the option of providing data on their occupation plans, educational expectations, and vocational interests. We used this data, along with student demographics, to derive groups of students for the third research question (Do students with certain postsecondary plans or interests perform relatively better on career readiness relative to college readiness?).

To assess occupation plans, students are asked: What is your first choice of occupation (vocation)? Students are provided a list of 294 occupations to choose from and may also indicate that they are undecided. The list of occupations is organized into 18 occupation categories. Among students in the sample, 35% provided their planned occupation. For analysis, we grouped students according to the 18 occupation categories.

To assess educational plans, students are asked: What is the highest level of education you expect to complete? Response options include high school, business or technical certificate, associate's degree, bachelor's degree, one or two years of graduate study, doctorate or professional degree, and other. Among students in the sample, 31% reported their educational expectations. Of these, 6% expected to complete only high school, 13% anticipated finishing education below a bachelor’s degree, and 81% expected to earn a bachelor’s degree or higher.

Relative performance was also compared across gender (male or female) and racial ethnic groups (Asian, Black, Hispanic, Native American, two or more races, or White).

Findings

To what extent are college readiness (ACT) and career readiness (WorkKeys) measures correlated?

To better understand the strength of the relationship of ACT and WorkKeys scores, correlations were examined (Table 4). The correlations with WorkKeys scores were generally high and consistent across ACT section test scores, ranging from 0.59 to 0.69 for Applied Math, 0.62 to 0.65 for Graphic Literacy, and 0.55 to 0.62 for Workplace Documents. Correlations of this magnitude suggest that students who perform well on the ACT are also likely to perform well on the WorkKeys assessments, but that the assessments provide some unique information.[4] As

[4] Correlations of tests that measure the same constructs with high reliability are expected to be very high. For example, the correlation of ACT Composite score obtained from two different test forms was 0.92, based on students in the 2025 ACT graduating class who took the ACT twice within a two-month period.

would be expected, the ACT Math score had the highest correlation with Applied Math (0.69), and a lower correlation with Workplace Documents (0.55).

Correlations of the combined ACT scores (Composite and English + Reading) with WorkKeys scores were generally higher than those observed for the ACT section test scores. The highest correlations were observed for the ACT Composite score, which might be expected given that the Composite score is the most reliable measure among the different ACT scores, and that WorkKeys measures foundational skills across multiple subject area domains.

Table 4. Correlations of ACT Scores and WorkKeys Scores

ACT Score	WorkKeys Score			
	Applied Math	Graphic Literacy	Workplace Documents	Total Score
English	0.64	0.65	0.62	0.71
Math	0.69	0.65	0.55	0.70
Reading	0.59	0.62	0.61	0.67
Science	0.64	0.64	0.57	0.69
English + Reading	0.65	0.67	0.65	0.73
Composite	0.70	0.70	0.65	0.76

The correlation of the ACT Composite score and WorkKeys total score was 0.76, indicating that the two measures are strong predictors of one another. To put this correlation into perspective, correlations of ACT Composite score with other measures include:

- 0.40 with first-year college GPA (Allen & Cruce, 2025, page 18)
- 0.55 with high school GPA based on student-reported grades (Allen & Cruce, 2025, page 41).
- 0.71 with difficulty-adjusted high school GPA based on transcript data (Allen et al., 2025)
- 0.90 with PreACT Composite score (ACT, 2025d, page 89)
- 0.89 to 0.93 with SAT total score (University of California, 2020, page 11)

Therefore, we can conclude that the relationship between ACT Composite score and WorkKeys total score is stronger than the relationship that is typically observed between ACT Composite score and academic performance outcomes, but weaker than the relationship that is typically observed between ACT scores and scores from other assessments of college readiness.

As mentioned above, the correlation of ACT Composite score and high school GPA based on student-reported grades was 0.55, as documented by prior research. In the current study 51% of the sample reported their high school grades. Among these students, the correlation of ACT Composite score with high school GPA was 0.56 and the correlation of WorkKeys total score with high school GPA was 0.52.

How many students are college-ready, career-ready, both, or neither?

Percent College Ready

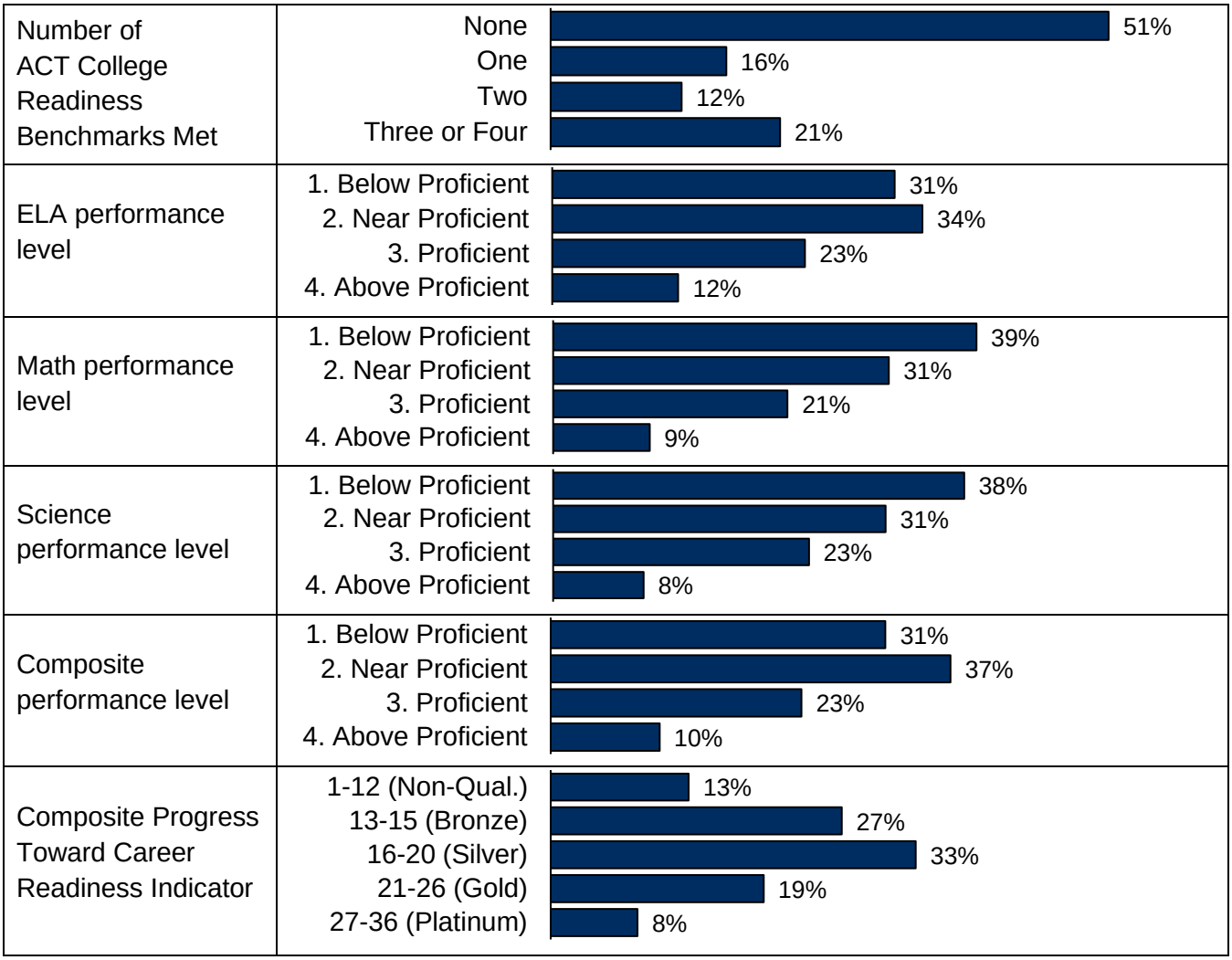
Using various performance standards for college readiness, we present the overall percentages of students meeting these levels (Figure 1).

We found that about half of the students (51%) did not meet any ACT College Readiness Benchmarks. Based on the Benchmarks, these students would be deemed not ready for common first-year college courses and may need additional academic support or may need to take developmental coursework. Other students were partially ready for first-year courses, with 16% meeting one Benchmark and 12% meeting two Benchmarks. Only 21% met three or four Benchmarks, indicating that meeting at least three Benchmarks is a high standard for academic achievement among the general high school student population.

Although state performance standards typically refer to "proficient" rather than "college-ready", proficient and college-ready are interpreted as one and the same for this analysis. From Figure 1, we see that fewer than half of the students were proficient or higher based on the state performance standards for ELA, math, and science. In ELA, 35% would be considered college-ready (proficient or above proficient), with 30% for math and 31% for science. Based on the Composite performance level, 33% would be considered college ready.

Based on the ACT Progress Toward Career Readiness indicator, 27% of the sample was predicted to earn a Gold or Platinum NCRC, which could also be interpreted as meeting a college readiness standard (e.g., ACT Composite of 21).

Figure 1. Percentage Meeting College Readiness Performance Levels



While only about one in three students were college ready, there are many who were partially or nearly college ready (e.g., Near Proficient): 28% met one or two Benchmarks; 34%, 31%,31%, and 37% were nearly proficient in ELA, math, science, and Composite, respectively; and 33% were predicted to earn a Silver NCRC.

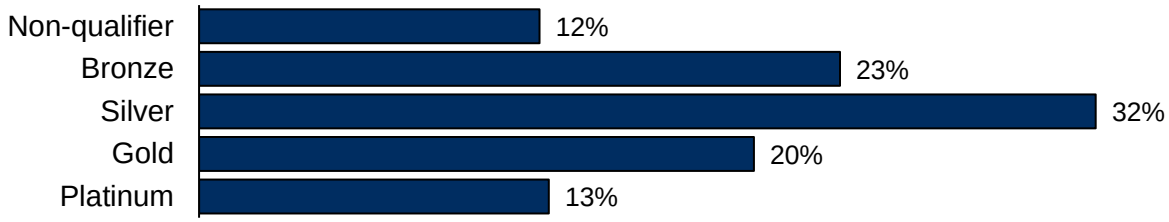
Percent Career Ready

Next, we examine career readiness based on NCRC levels. The percentage of students scoring at each NCRC level are provided in Figure 2. Overall, 88% of the students earned a career readiness credential with only 12% not qualifying for an NCRC. We can conclude that the percentage of students who are career ready is much higher than the percentage who are college ready.

Among students in the sample, 65% earned a Silver or higher NCRC. This means that nearly two out of every three students have the foundational skills needed for entry into most jobs.

Another 23% earned a Bronze NCRC, demonstrating foundational skills needed for entry into a more limited set of jobs with lower average earnings. Similar to the share of students who were college ready, about one in three students earned a Gold or Platinum NCRC.

Figure 2. Percentage Meeting Career Readiness (NCRC) Levels



Percent College and/or Career-Ready

Next, we examine the cross sections of college and career readiness. The tables that follow show the percentage of students who performed at each level of college and career readiness. This lets us determine how many students were neither college ready nor career ready, both college ready and career ready, and college or career ready (but not both). In the tables that follow, cells where students are college and career ready are shaded in green, those where students are neither college nor career ready are shaded in red, and those where students are college or career ready (but not both) are shaded in yellow.

Table 5 shows the percentage of students at different levels of ACT Benchmarks met and NCRC levels. Using two or more Benchmarks met as an indicator of college readiness and using Silver or higher as an indicator of career readiness, we find that 31% of the sample was college and career ready, 33% was neither college nor career ready, 2% was college ready but not career ready, and 34% was career ready but not college ready.

Table 5. Percentage of Students by Number of College Readiness Benchmarks Met and NCRC Level

Number of ACT College Readiness Benchmarks Met	NCRC Level				
	Non-Qual.	Bronze	Silver	Gold	Platinum
0	11.1	18.5	17.2	3.8	0.3
1	0.6	3.0	7.5	4.2	0.7
2	0.3	1.1	4.6	4.6	1.4
3 or 4	0.2	0.4	2.9	7.3	10.1

Table 6 shows the percentage of students at different ELA performance levels and NCRC levels. Using Silver or higher as an indicator of career readiness, we find that 32% of the sample was college ready in ELA (proficient or higher) and career ready, 33% was neither college ready in ELA nor career ready, 3% was college ready in ELA but not career ready, and 32% was career ready but not college ready in ELA.

Table 6. Percentage of Students by ELA Performance Level and NCRC Level

ELA Performance Level	NCRC Level				
	Non-Qual.	Bronze	Silver	Gold	Platinum
1 (Below Proficient)	9.5	12.3	8.2	1.3	0.1
2 (Near Proficient)	2.2	8.8	15.5	6.3	1.0
3 (Proficient)	0.4	1.8	7.5	8.9	4.5
4 (Above Proficient)	0.1	0.2	1.1	3.3	6.9

The findings for math (Table 7) and science (Table 8) are similar to those observed for ELA. Generally, the sample is evenly split among three groups: those who are both college and career ready, those who are neither college nor career ready, and those who are career ready but not college ready. Relatively few students are college ready but not career ready.

Specifically, for math:

- 29% were college ready (proficient or higher) and career ready
- 34% were neither college ready nor career ready
- 2% were college ready but not career ready
- 36% were career ready but not college ready

Table 7. Percentage of Students by Math Performance Level and NCRC Level

Math Performance Level	NCRC Level				
	Non-Qual.	Bronze	Silver	Gold	Platinum
1 (Below Proficient)	10.0	15.1	11.5	2.1	0.2
2 (Near Proficient)	1.8	6.6	14.1	7.1	1.2
3 (Proficient)	0.4	1.2	5.9	8.6	5.5
4 (Above Proficient)	0.1	0.1	0.8	2.2	5.6

Similarly, for science:

- 30% were college ready (proficient or higher) and career ready
- 33% were neither college ready nor career ready
- 2% were college ready but not career ready
- 35% were career ready but not college ready

Table 8. Percentage of Students by Science Performance Level and NCRC Level

Science Performance Level	NCRC Level				
	Non-Qual.	Bronze	Silver	Gold	Platinum
1 (Below Proficient)	9.3	14.1	11.5	2.6	0.3
2 (Near Proficient)	2.4	7.4	13.3	6.2	1.1
3 (Proficient)	0.4	1.5	6.9	9.2	5.5
4 (Above Proficient)	0.1	0.1	0.6	2.0	5.6

The results were also similar when considering college readiness based on the Composite score ranges corresponding to typical state performance levels for ELA and math:

- 31% were college ready (proficient or higher) and career ready
- 33% were neither college ready nor career ready
- 2% were college ready but not career ready
- 34% were career ready but not college ready

Table 9. Percentage of Students by Composite Performance Level and NCRC Level

Composite Performance Level	NCRC Level				
	Non-Qual.	Bronze	Silver	Gold	Platinum
1 (Below Proficient)	9.6	12.4	7.5	1.0	0.1
2 (Near Proficient)	2.1	9.3	17.4	6.8	0.9
3 (Proficient)	0.4	1.3	6.8	9.6	5.0
4 (Above Proficient)	0.1	0.1	0.6	2.5	6.6

Using the ACT Progress Toward Career Readiness indicator, students who are predicted to earn a Gold or Platinum NCRC are also considered college ready because their ACT Composite score is at least 21, which is the average score across the ACT College Readiness Benchmarks. Based on this college readiness performance standard, 26% of students were college and career ready, 34% were neither college ready nor career ready, 1% were college ready but not career ready, and 38% were career ready but not college ready.

Table 10 also allows us to examine the accuracy of the ACT Progress Toward Career Readiness indicator. We find that the predicted NCRC level is the same as the actual NCRC level for 46% of the sample and within one level of the actual NCRC level for 92% of the sample.

Table 10. Percentage of Students by Composite Progress Toward Career Readiness Level and NCRC Level

Composite Performance Level	NCRC Level				
	Non-Qual.	Bronze	Silver	Gold	Platinum
1-12 (Non-Qual.)	5.6	4.7	2.0	0.3	0.0
13-15 (Bronze)	4.9	10.9	9.2	1.5	0.1
16-20 (Silver)	1.4	6.6	15.8	8.2	1.3
21-26 (Gold)	0.3	0.8	4.8	8.2	5.5
27-36 (Platinum)	0.1	0.1	0.4	1.8	5.6

Percent Career Ready, by College Readiness Level

Next, we examine the percentage of students at various levels of career readiness, among those at various levels of college readiness. These conditional percentages help us understand to what extent students at different performance levels based on a traditional high school assessment (the ACT test) achieve different levels of carer readiness using an assessment designed specifically to measure career readiness (WorkKeys).

The conditional percentages show that a substantial percentage of students with no college readiness credentials earn career readiness credentials, and a very large share of students who are college ready are also career ready. Figure 3 shows the distribution of NCRC levels, by number of ACT College Readiness Benchmarks met. Among students meeting no Benchmarks, 78% earned a Bronze or Higher NCRC, with 42% earning a Silver or higher. Among students who only met one Benchmark, 77% earned a Silver or higher NCRC. Among students meeting three or four Benchmarks, only 3% failed to earn a Silver or higher NCRC.

Figure 3. Percentage Meeting NCRC Levels, by Number of College Readiness Benchmarks Met

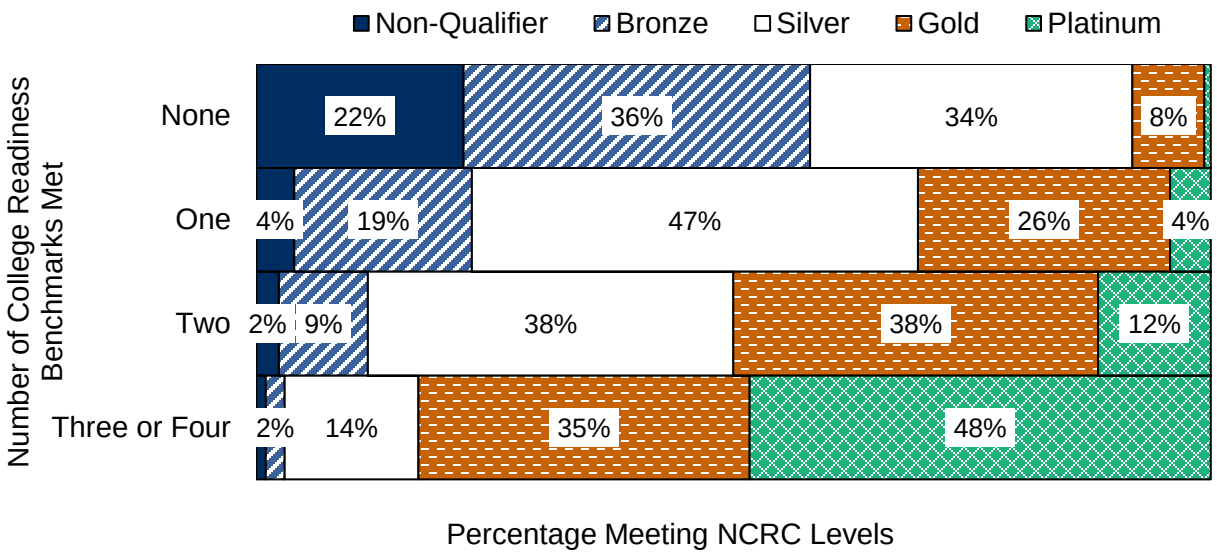
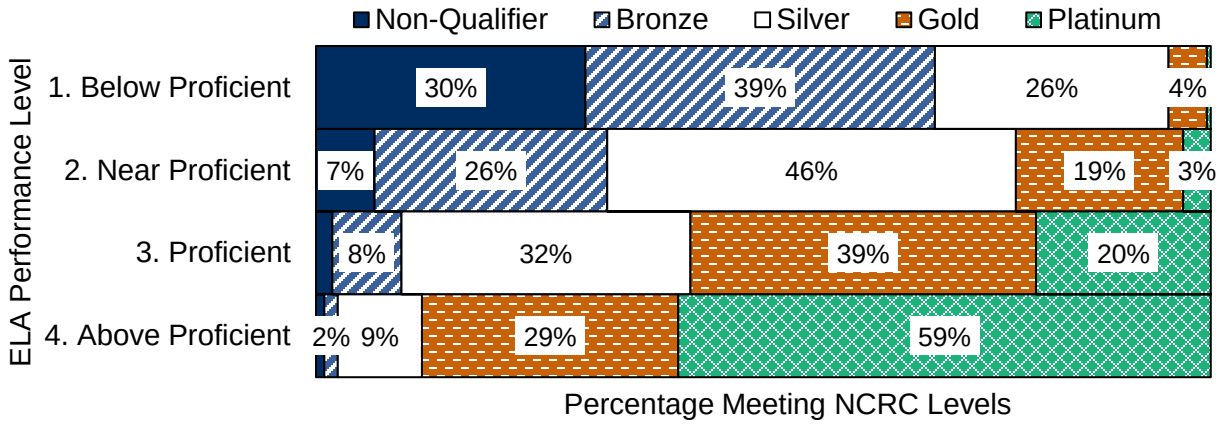


Figure 4 shows the distribution of NCRC levels, by ELA performance level. Among students who were below proficient, 70% earned a Bronze or Higher NCRC, with 31% earning a Silver or higher. Among students who were near proficient, 67% earned a Silver or higher NCRC. Among students who were proficient in ELA, 91% earned a Silver or higher NCRC. Among students who were above proficient in ELA, 88% earned a Gold or Platinum NCRC.

Figure 4. Percentage Meeting NCRC Levels, by ELA Performance Level



Similar patterns of results were observed for math (Figure 5), science (Figure 6), and composite (Figure 7) performance levels. For example,

- Among students who were below proficient in math, 74% earned a Bronze or Higher NCRC, with 35% earning a Silver or higher.
- Among students who were near proficient in science, 68% earned a Silver or higher NCRC.
- Among students who were above proficient in composite, 92% earned a Gold or Platinum NCRC.

Figure 5. Percentage Meeting NCRC Levels, by Math Performance Level

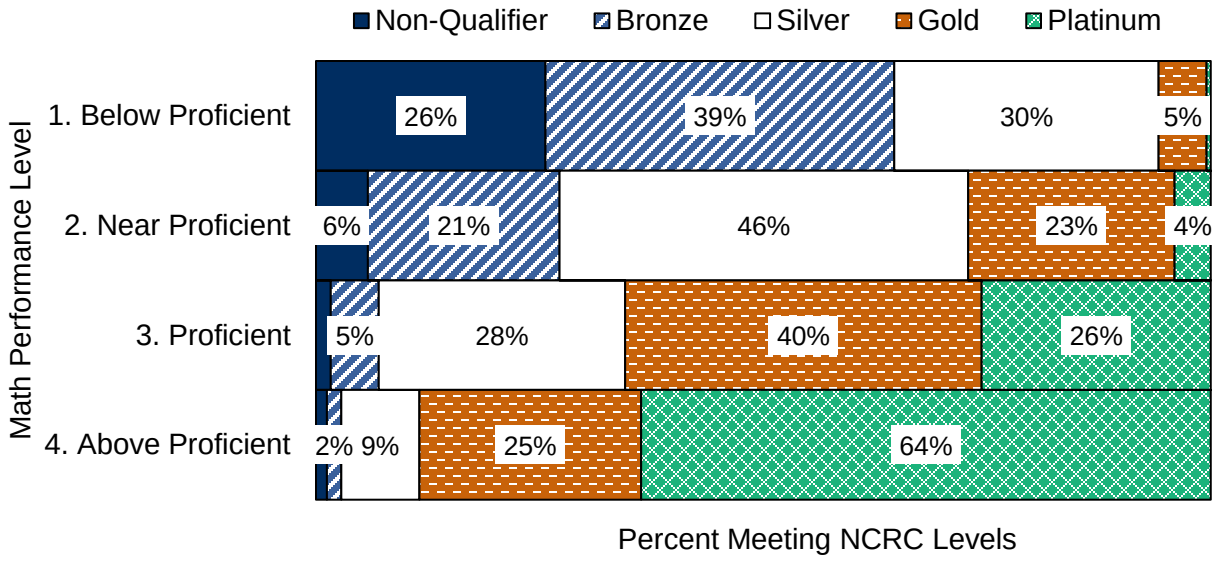


Figure 6. Percentage Meeting NCRC Levels, by Science Performance Level

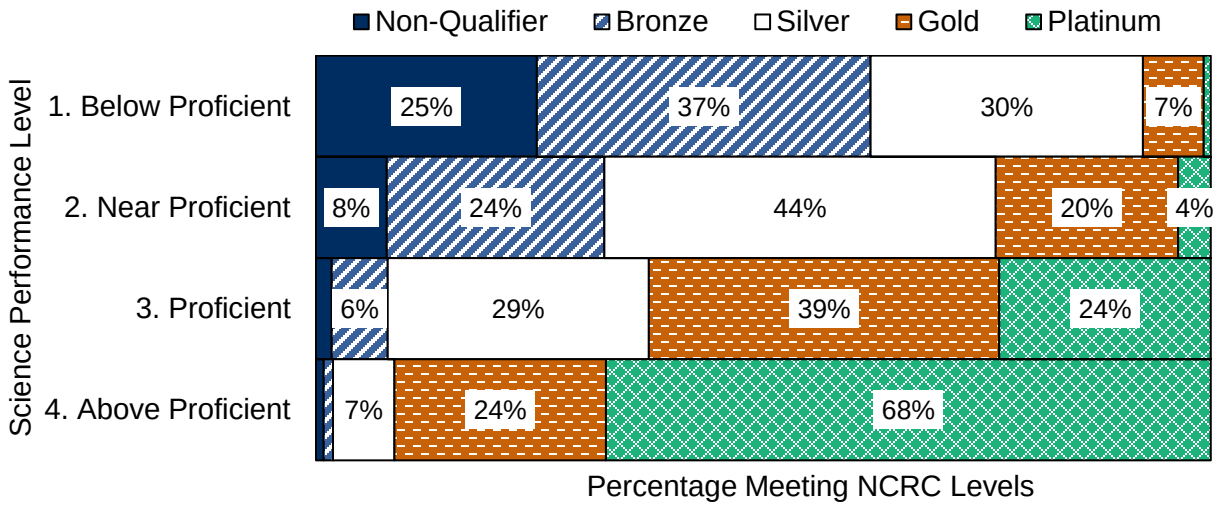


Figure 7. Percentage Meeting NCRC Levels, by Composite Performance Level

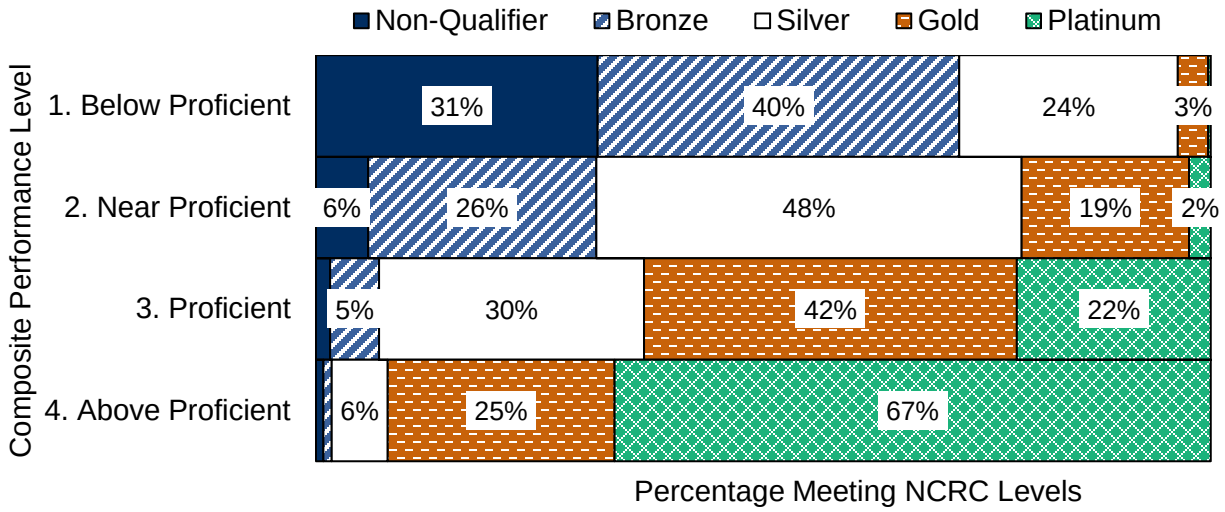
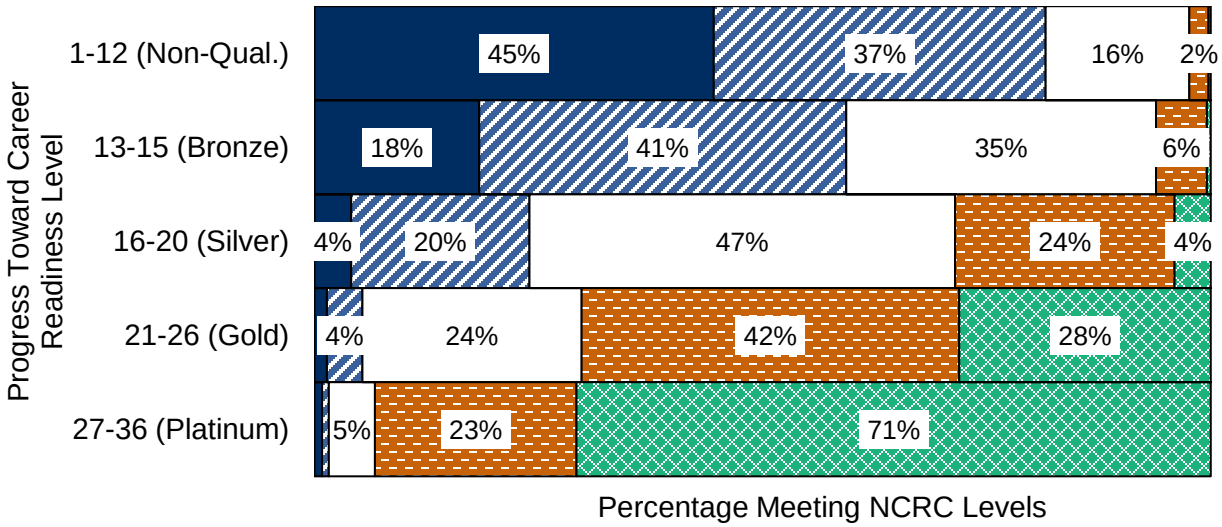


Figure 8 shows the percentage of students earning different NCRC levels, by Progress Toward Career Readiness level. By design, the most common NCRC level matches the predicted NCRC level. Among students with a Composite score between 21 and 26 (indicating readiness for college and predicted to earn a Gold NCRC), 94% earned a Silver or higher NCRC and 70% earned a Gold or higher NCRC.

Figure 8. Percentage Meeting NCRC Levels, by Composite Progress Toward Career Readiness Level



Overall, the results show that, among students who are near proficient or college ready, most are career ready. And among students who are proficient or above proficient, relatively few are not career ready.

Do students with different postsecondary plans or interests perform better on career readiness relative to college readiness?

Next, we examine whether relative performance on career readiness (WorkKeys) and college readiness (the ACT) varied by students' postsecondary plans and vocational interests. As described earlier, students performed relatively better on WorkKeys if the sample rank of their WorkKeys total score was greater than the sample rank of their ACT Composite score. Figure 9 shows the distribution of the differences in percentile ranks. About 26% of the sample performed better on the ACT than on WorkKeys, with a rank of difference of 10 or more percentage points. Likewise, about 26% of the sample performed better on WorkKeys than the ACT. About 47% of the sample performed similarly on the two assessments, with ranks within 9 percentage points of one another.

Figure 9. Distribution of Differences in Relative Performance on WorkKeys and ACT

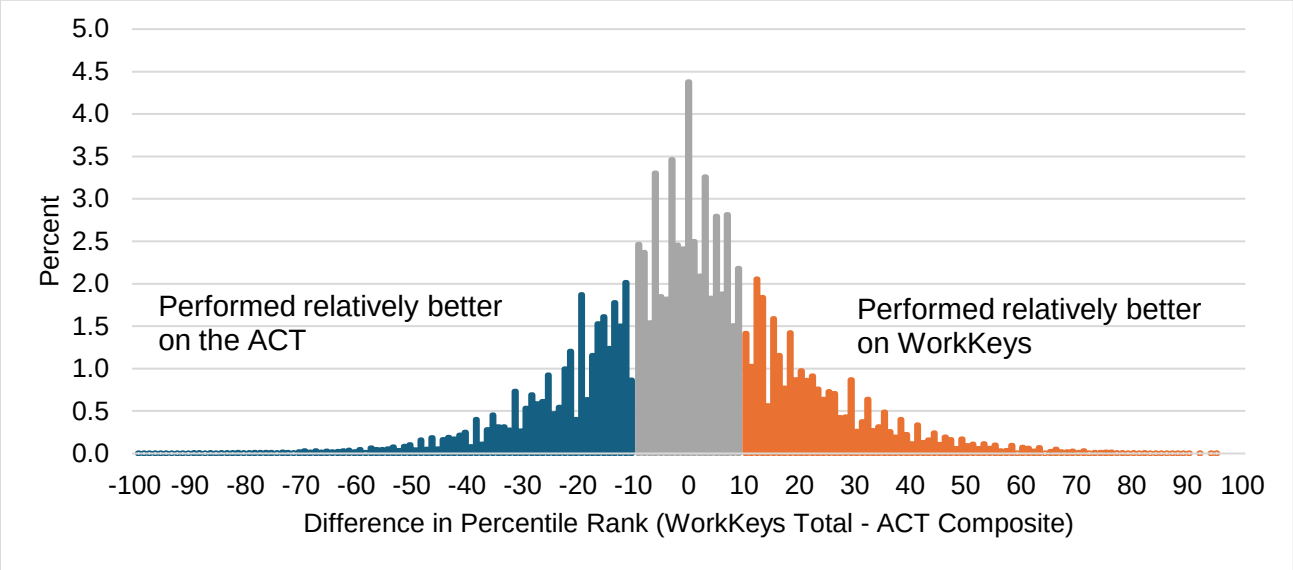
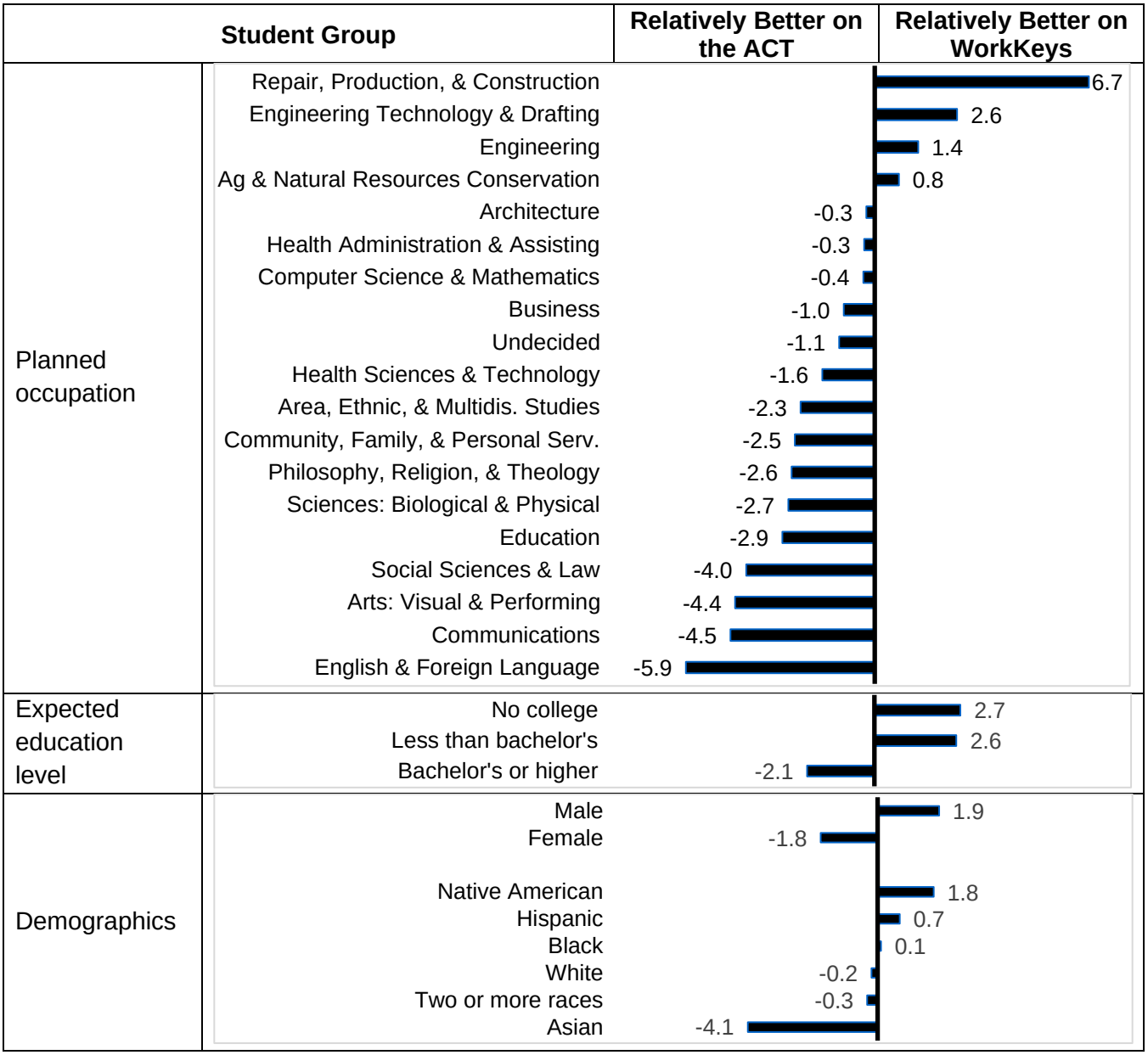


Figure 10 displays average rank differences by student group. Positive values indicate that a group performed better on WorkKeys than ACT; negative values mean the reverse. Results are reported for four categories of student characteristics: planned occupation, expected education level, interest type, and demographics.

From Figure 10, we see several differences in relative performance across student groups, with most of the differences being rather small:

- Students with occupation plans in skilled trades performed relatively better on WorkKeys.
- Students with occupation plans in the social sciences, arts, communications, and languages performed relatively better on the ACT.
- Students who were undecided on their occupation plans performed slightly better on the ACT relative to WorkKeys.
- Students who did not plan to go to college or who expected to earn less than a bachelor's degree performed relatively better on WorkKeys while those who expected to earn at least a bachelor's degree performed relatively better on the ACT.
- Differences in relative performance were small across demographic groups, with students who are male or Native American performing relatively better on WorkKeys, and students who are female or Asian performing relatively better on the ACT.

Figure 10. Differences in Relative Performance on WorkKeys and ACT, by Student Group



Discussion

Using a large and diverse sample of students who took the ACT and WorkKeys assessments while in high school, we examined key questions around how student readiness is classified according to both college and career readiness performance standards. We used the ACT test, and performance levels that have been set for ACT scores, to measure college readiness. We used three WorkKeys assessments, and the WorkKeys NCRC levels, to measure career readiness. Although both the ACT and WorkKeys have interpretations and uses for both college and career readiness, this research considered each assessment according to its principal purpose: ACT for college readiness and WorkKeys for career readiness.

The ACT test and WorkKeys assessments are designed to measure related but distinct constructs. Both assessments evaluate math, reading, and data interpretation skills and show alignment with college and career readiness standards. The ACT test assesses knowledge, skills, and concepts typically taught in high school and relevant for college coursework, whereas the WorkKeys assessments focus on foundational skills within workplace contexts. The ACT emphasizes academic skills, while WorkKeys highlights how well skills are transferred to professional environments.

While the percentage of students meeting typical state proficiency standards on the ACT test was 35% for ELA, 30% for math, and 31% for science, we found that 65% earned a Silver or higher NCRC. Many students who do not meet standards for proficiency (and college readiness) do meet standards for career readiness.

A key observation is that students typically fall into one of three categories: those who are both college ready and career ready, those who are career ready but not college ready, and those who are neither college ready nor career ready. It is uncommon for students to be college ready but not career ready.

The distinction between students being career ready and college ready affects how high school assessment and accountability systems function. Traditional proficiency levels often define "proficient" as both college and career ready and proficiency thresholds are generally set higher than those for needed for career readiness (such as Silver NCRC). This means that students designated as proficient exceed the career readiness standard, so that standards for college and career ready essentially revert to standards for college readiness. Treating college and career readiness as a single standard leads to underestimation of the share of students prepared for college or work.

Adopting separate standards for college and career readiness leads to the recognition that a substantial share of students – approximate one in three – are career ready but not college ready. This could lead to a large shift in how performance on accountability assessments is reported and perceived by the public. Reporting higher rates of readiness based on college or career readiness reflects the use of standards that are appropriate for both pathways, rather than a download adjustment (e.g., “lowering the bar”) of academic expectations. Adopting separate standards improves the accuracy of the reporting system by correctly counting

students who are career ready. States that adopt separate performance standards for college and career readiness should take care to engage educational stakeholders and the public to communicate the rationale for the change and what to expect with future accountability reporting.

Having different assessments and standards for college and career readiness may also improve the relevance of high school assessment for students with different postsecondary plans. While the ACT test has been used successfully as an all-student accountability test with no discernible loss of motivation (Steedle, 2021), students with no college plans may believe that the test is not relevant to them. Our study found that certain groups of students performed relatively better on the career readiness test (WorkKeys) than the college readiness test (the ACT). This included students with occupation plans in the skilled trades, students who did not expect to earn a bachelor's degree or higher level of education, and students who are male. Offering both a college readiness and a career readiness assessment could provide more students with an assessment aligned to their postsecondary plans and an opportunity to demonstrate their strengths.

The ACT and WorkKeys tests also offer students the opportunity to earn nationally recognized credentials for college and work. College-bound students can send their ACT scores to bolster their chances for admission to their preferred college and academic programs, to earn college scholarships, or to demonstrate their readiness for credit-bearing courses. Further, if they earn a Silver or higher NCRC, they can use their WorkKeys results to earn college credit.[5] High school students seeking work can use their NCRC to communicate their readiness to potential employers through their online WorkKeys account and by including a digital badge with their employment credentials. Many students are undecided about college or may need to save money before beginning college. For these students, taking both assessments can help them transition to the workforce and still support their need for college if they choose that path later.

While the ACT and WorkKeys assessments provide credentials for college and career readiness, they do not guarantee success in college or work, nor do they represent all dimensions of college and career readiness. The ACT test and WorkKeys assessments most directly measure the core academic skills component of the ACT Holistic Framework of Education and Work Readiness (Camara et al., 2015). In addition to core academic skills, the Framework describes other domains of readiness that are important for success, including cross-cutting capabilities, behavioral skills, and education and career navigation. Further, while a Silver or higher NCRC indicates that students have the foundational skills for most occupations, many of those occupations still require some education beyond high school or on-the-job training. The Framework offers an overview of how students can engage with all domains of readiness to achieve their goals.

[5] In 2025, the American Council on Education (ACE) recommended that colleges and universities in the lower-divisional baccalaureate/associate degree category award up to 9 semester hours of college credit to individuals who earn a WorkKeys NCRC at the Silver, Gold, or Platinum level.

Conclusion

Based on a large sample of students who took the ACT and WorkKeys assessments, we addressed key questions related to using different assessments and different performance standards for college and career readiness. While students who performed well on the college readiness assessment also tended to perform well on the career readiness assessment, the assessments each provide some unique information, and many students perform better on one assessment relative to the other.

We conclude that there are potential benefits to having separate assessments and separate performance standards for college and career readiness, including:

- Greater relevance of high school assessments for all students, regardless of their college or work plans
- Greater accuracy for measuring and reporting college and career readiness, reflecting the reality that approximately one in three students is career ready but not college ready.
- Benefits to students for obtaining college and career readiness credentials, opening opportunities for employment, work training programs, college admissions, and scholarships.

References

ACT (2025a). ACT Technical Manual. https://www.act.org/content/dam/act/unsecured/documents/ACT_Technical_Manual.pdf

ACT (2025b). Fall 2025 Updates to the ACT® Progress Toward Career Readiness Indicator. https://www.act.org/content/dam/act/unsecured/documents/Fall-2025-Updates-ACT-Progress-Toward-Career-Readiness-Indicator.pdf

ACT (2025c). WorkKeys NCRC Assessments Technical Manual. https://www.act.org/content/dam/act/unsecured/documents/ACT-workkeys-NCRC-technical-manual.pdf.

ACT (2025d). PreACT Technical Manual. *https://www.act.org/content/dam/act/unsecured/documents/PreACT-Technical-Manual.pdf*

Allen. J. (2013). Updating the ACT College Readiness Benchmarks. ACT Research Report. https://www.act.org/content/dam/act/unsecured/documents/ACT_RR2013-6.pdf

Allen, J. and Cruce, T. (2025). Initial Evidence Supporting Interpretations of Scores from the Enhanced ACT Test. ACT Research Report. https://www.act.org/content/dam/act/unsecured/documents/R2425-Initial-Evidence-Supporting-Interpretations-of-Scores-from-the-Enhanced-ACT-Test-2025-06.pdf

Allen, J., Vargas, S., Clark, T., Heneger, J., and Riddlesperger, J. (2025). Using High School Transcript Data to Drive Improvement in High School Course Rigor. Presentation at 2025 ACT Summit. July 17, 2025. Nashville, Tennessee.

Camara, W., Allen, J, and Moore, J. (2017). Empirically-based college and career readiness cut scores and performance standards. In K. McClarty, K. Mattern, and M. Gaertner (Eds.). Preparing students for college and careers: Theory, measurement, and educational practice. New York, NY: Routledge.

Camara, W., O'Connor, R., Mattern, K., Hanson, M.A. (eds.) (2015). Beyond academics: A holistic framework for enhancing education and workplace success. ACT Research Report. https://www.act.org/content/dam/act/unsecured/documents/ACT_RR2015-4.pdf

Conway, J. (2023). Criterion-Related and Differential Validity of ACT WorkKeys in Arkansas. ACT Technical Brief. *https://www.act.org/content/dam/act/unsecured/documents/R2131-Criterion-Related-and-Differential-Validity-of-ACT-WorkKeys-in-Arkansas-07-2023.pdf*

Holland, J. L. (1997). Making vocational choices: A theory of vocational personalities and work environments (3rd ed.). Psychological Assessment Resources.

Lefebvre, M. and Steedle, J. (2019). The Condition or Career Pathway Readiness in the United States 2019. ACT Policy & Research. *https://www.act.org/content/dam/act/unsecured/documents/condition-career-pathway-2019.pdf*

Mattern, K. and Cruce, T. The Importance of Graduating from High School College and Career Ready: The Positive Relationship between ACT Score and Future Earnings. ACT Data Byte. *https://www.act.org/content/dam/act/unsecured/documents/2021/R2126-relationship-between-ACT-scores-annual-earnings-CE-1.pdf*

Mattern, K., Radunzel, J., and Westrick, P. (2015). Development of STEM readiness benchmarks to assist educational and career decision making. ACT Research Report. *https://www.act.org/content/dam/act/unsecured/documents/ACT_RR2015-3.pdf*

Montana Office of Public Instruction (2017). Empirical Standard Setting. *https://opi.mt.gov/Portals/182/Page%20Files/Statewide%20Testing/ACT%20Page/Montana%20Technical%20Report%20Empirical%20Standard%20Setting%20for%20ACT.pdf*

Moore, J.L., & Kapoor, S. (2022). Arizona Standard Setting for the ACT. July 6-7, 2022. *https://www.azed.gov/sites/default/files/2023/02/Arizona%20ACT%20Standard%20Setting%20Technical%20Report%202022.pdf*

Moore, J.L., Steedle, J., Camara, W., & Fisher, T. (2017). 2017 Nebraska Standard Setting for the ACT. *https://www.education.ne.gov/wp-content/uploads/2018/01/ACT-Nebraska-Standard-Setting.pdf*

Radunzel, J., Westrick, P., Bassiri, D., and Li, D. (2017). Development and validation of a preliminary ELA readiness benchmark based on the ACT ELA score. ACT Research Report. https://www.act.org/content/dam/act/unsecured/documents/R1640-preliminary-ela-benchmark-2017-06.pdf.

Steedle, J. (2021). Are they trying? Motivation in state census testing with a college admissions exam. ACT Research Report. https://www.act.org/content/dam/act/unsecured/documents/pdfs/R2130-motivation-report-2021-11-1.pdf

University of California (2020). Relationship of the SAT/ACT to College Performance at the University of California. https://ucop.edu/institutional-research-academic-planning/_files/sat-act-study-report.pdf

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