

1.1.b Preparation for College

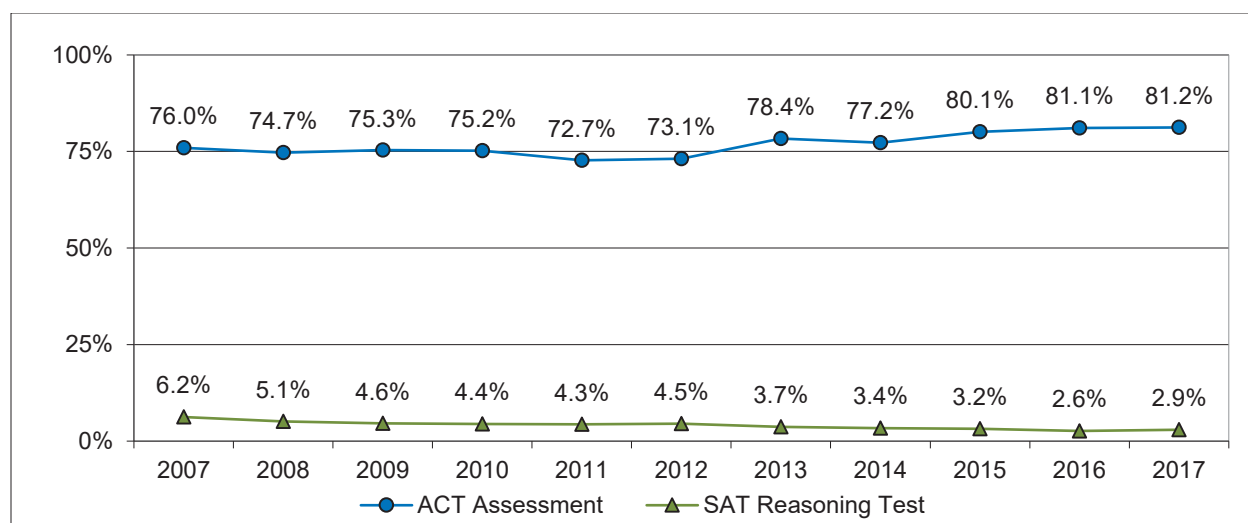
Increase the proportion of Nebraska high school graduates who are adequately prepared to enroll in postsecondary education and proceed through degree completion.

The results of the ACT Assessment and the new SAT® are summarized in this section as indicators of the extent to which Nebraska high school graduates are prepared academically to enter and proceed through postsecondary education.⁵ Of particular interest are (1) the estimated percentages of Nebraska high school graduates who are prepared for college-level coursework and (2) the higher average ACT scores achieved by students who take the “core” high school courses recommended to prepare them for college.

Nebraska Participation Rates for the ACT Assessment and the SAT Test

- The ACT Assessment is the predominant college entrance exam available to measure the extent to which Nebraska students are prepared for academic coursework beyond high school. As shown in [Figure 1.1.b.1](#), 81.2% of the Nebraska high school students in the graduating class of 2017 took the ACT Assessment (up from 76.0% in 2007). In comparison, 2.9% of the students took the SAT Test in 2017 (down from 6.2% in 2007).

Figure 1.1.b.1
Percentages of Nebraska High School Graduates
Who Took the ACT Assessment and/or the SAT Test
2007 through 2017



Note. See [Table A4.1](#) in [Appendix 4](#) for supporting data. Data sources: ACT, Inc., College Board, and the Nebraska Department of Education, 2007 through 2017.

⁵ SAT cohort data for 2007 through 2015 include students tested through June of their senior year. Cohort data for 2016 include students tested through January. The SAT was then redesigned, and the first administration of the new SAT took place in March 2016. Participation data for students who took the new SAT between March 2016 and June 2016 are not included in the 2016 cohort data due to the redesign of the SAT test. Due to the redesign of the SAT test, new SAT outcomes should not be compared against results from the old SAT. Consequently, the 2017 performance data for the new SAT established a new baseline for future comparisons.

- The recent increase in participation rates for the ACT Assessment is at least partially due to the Nebraska ACT Pilot Project. Funded by the Nebraska Legislature, this project required all 11th graders in eight selected Nebraska public school districts to take the ACT during a school day in the spring of 2012, 2013, and 2014.
- Beginning in 2016, all 11th graders now take the ACT in place of the NeSA (Nebraska State Accountability). This change will affect participation rates, and will also likely affect test scores, beginning with the class of 2018.

Nebraska SAT Test Scores

The two components of the new SAT Test measure achievement in mathematics and evidenced-based reading and writing. As discussed in the footnote on the previous page, the SAT Test was redesigned in the spring of 2016, and the 2017 performance data for the new SAT established a new baseline for future comparisons.

- As shown in [Table 1.1.b.1](#), the average evidenced-based reading and writing scores and math scores of Nebraska high school students who took the SAT were well above the national averages in 2017. However, it is important to note that only a relatively small number of students in Nebraska’s graduating class of 2017 took the SAT (680).

Table 1.1.b.1 National and Nebraska Average SAT Test Scores 2017				
Year of High School Graduation	Evidenced-Based Reading and Writing Scores		Math Scores	
	National	Nebraska	National	Nebraska
2017	533	629	527	625
Data source: College Board, <i>SAT Suite of Assessments Annual Report Nebraska, 2017</i> .				

Nebraska ACT Assessment Scores

The ACT Assessment consists of four curriculum-based achievement tests in English, reading, mathematics, and science. A student’s scores for each of these tests are reported on a 36-point scale. A composite score is reported on a 36-point scale to reflect the student’s overall performance on the series of four tests.

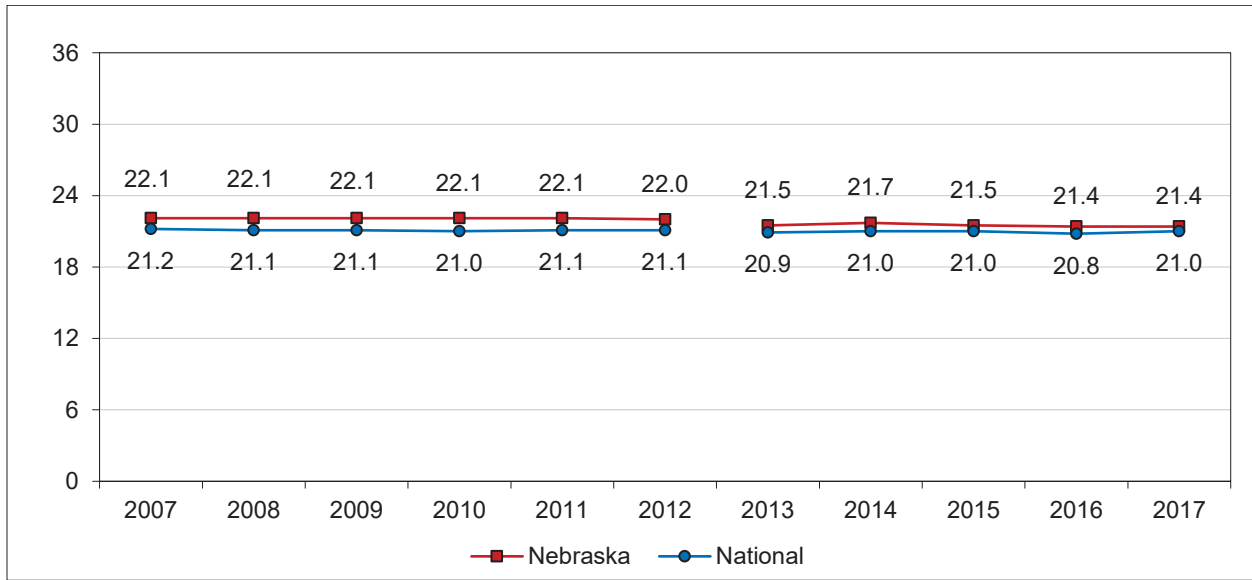
- As shown in [Figure 1.1.b.2](#), the average ACT composite score for Nebraska high school students in the graduating class of 2017 was 21.4, down from 22.1 in 2007. Nebraska’s 2017 average ACT composite score was 0.4 point higher than the national average of 21.0.
- There are two known reasons for the recent decline in the average ACT composite score.
 - First, starting in 2013, extended-time test takers are included in national and state composite scores. Nebraska’s average ACT composite score for extended-time test takers in 2017 was 17.4. Without extended-time students, Nebraska’s average composite score would increase 0.2 point to 21.6.⁶

⁶ Students with disabilities are provided reasonable accommodations appropriate to the student’s disability. Approved students have up to five total hours (50% more time) to complete all four multiple-choice tests.

- Second, the Nebraska ACT Pilot Project required all 11th graders in eight selected Nebraska public school districts to take the ACT during a school day in the spring of 2012, 2013, and 2014. The net effect of this project on ACT scores is unknown as the Commission does not know which students would have taken the ACT Assessment had it not been required.

Figure 1.1.b.2

Comparison of Nebraska and National Average ACT Composite Scores for the High School Graduating Classes of 2007 through 2017



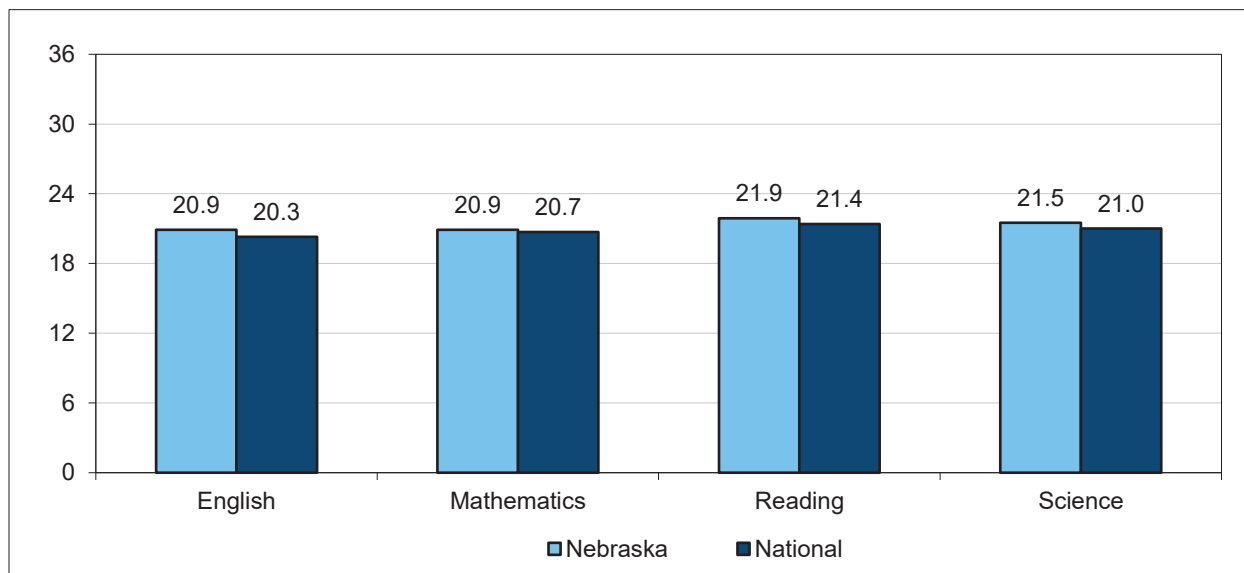
Note. Beginning with the graduating class of 2013, scores for extended-time test takers are included in reported ACT composite scores. Data source: ACT, *High School Profile Report - Nebraska*, 2007 through 2017.

- Based on information from ACT, Inc., Nebraska was tied for the third highest average composite score among the 22 states where an estimated 80% to 100% of the 2017 high school graduates took the ACT Assessment. However, direct state-to-state comparisons are generally not advisable.⁷
- [Figure 1.1.b.3](#) shows that Nebraska students in the 2017 graduating class scored above the national average on each of the subject-area tests that constitute the ACT Assessment.

⁷ The ACT Assessment is administered in all 50 states, and it is the predominant college entrance exam taken in about half of the states. Nationally, 2,030,038 (an estimated 60%) of the students in the high school graduating class of 2017 took the ACT Assessment. Each year, average ACT scores are reported for every state, but state-to-state comparisons are not advisable for several reasons. Currently, there are 17 states where the ACT Assessment is administered to 100% of the students who will graduate from high school. In all other states, the students who take the ACT are generally self-selected and, as a result, do not necessarily represent the total student populations of their states. Furthermore, the percentages of students who take the ACT vary greatly from one state to another, as do other factors that affect student achievement, such as the quality of school systems and the demographic and socio-economic characteristics of students and their families. For these reasons, specific state-to-state comparisons are not included in this report.

Figure 1.1.b.3

**Comparison of National and Nebraska Average ACT Composite Scores
in English, Reading, Mathematics, and Science
for the High School Graduating Class of 2017**



Data source: ACT, *High School Profile Report - Nebraska*, 2017.

ACT College Readiness Benchmark Scores

Based on research conducted by ACT, Inc., students are prepared to succeed in entry-level college courses if their scores on the ACT Assessment meet or exceed ACT College Readiness Benchmark Scores. *A benchmark score is the minimum score needed on an ACT subject-matter test to indicate that a student has a 50% chance of earning a B or higher or about a 75% chance of earning a C or higher in related entry-level, credit-bearing college courses.* Corresponding to the subject-matter tests that constitute the ACT Assessment, these courses include English composition, social sciences, algebra, and biology. For each college course or subject area, the 2017 ACT subject-area test and College Readiness Benchmark Scores are:

<u>College Course or Area</u>	<u>ACT Subject-Area Test</u>	<u>College Readiness Benchmark Score⁸</u>
English Composition	English	18
Social Science	Reading	22
Algebra	Mathematics	22
Biology	Science	23

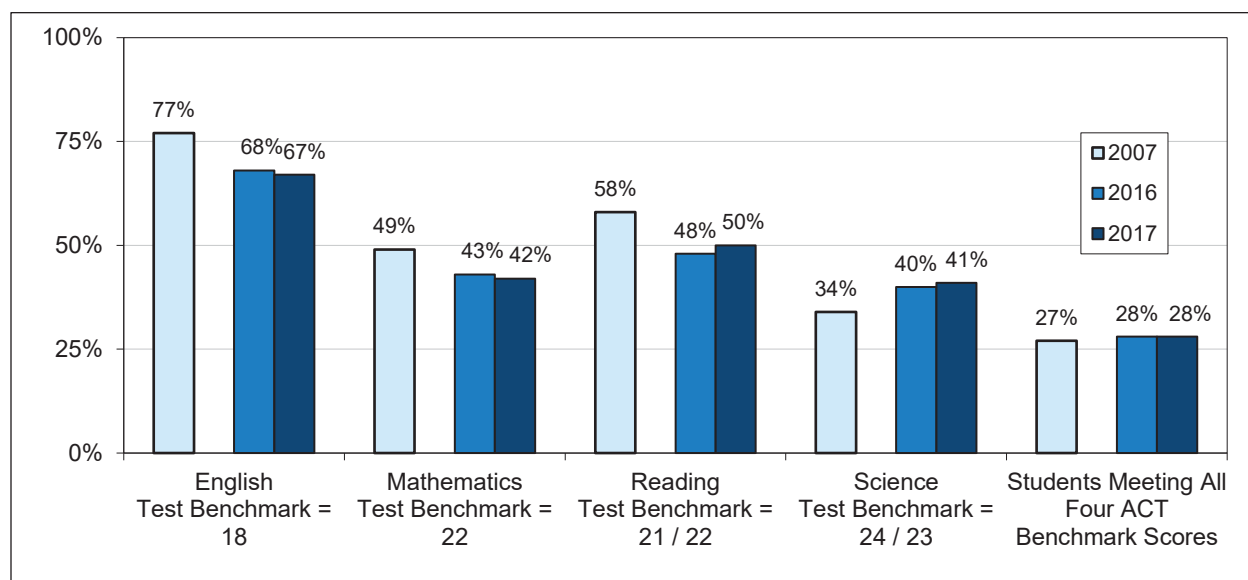
⁸ Beginning in 2013, the reading benchmark score increased from 21 to 22 and the science benchmark score decreased from 24 to 23.

Percentages of Nebraska ACT-Tested Students Ready for College-Level Coursework

- Based on the data summarized in [Figure 1.1.b.4](#), 67% of the ACT-tested Nebraska high school graduating class of 2017 met or exceeded the College Readiness Benchmark Score of 18 on the ACT English test, indicating that there is a relatively high probability that these students will earn at least a C in college-level English composition courses.
- In comparison, 42% met or exceeded the mathematics benchmark score of 22 for college algebra; 50% met or exceeded the benchmark score of 22 on the reading test; and only 41% met or exceeded the science benchmark score of 23 for biology.
- Between 2007 and 2017, the percentages of Nebraska students who met or exceeded ACT College Readiness Benchmarks on the English, mathematics, and reading tests decreased ten, seven, and eight percentage points, respectively. The only increase seen from 2007 to 2017 was for the science benchmark, which increased seven percentage points.
- Between 2016 and 2017, the percentage of Nebraska students who met or exceeded ACT College Readiness Benchmarks for English and mathematics both decreased one percentage point. Meanwhile, the percentage that met or exceeded the benchmark for reading increased two percentage points while the percentage that met or exceeded the benchmark for science increased one percentage point.
- **Only 28% of Nebraska's high school graduates in the class of 2017 met or exceeded the ACT College Readiness Benchmarks in all four subject areas included in the ACT Assessment.** This percentage is one point higher than in 2007.

Figure 1.1.b.4

Percentages of ACT-Tested Students Meeting ACT College Readiness Benchmarks that Indicate Sufficient Preparation for College-Level Courses Nebraska High School Graduating Classes: 2016 and 2017 Compared to 2007



Note. Beginning with the 2013 graduating class, ACT's college readiness benchmark score for reading increased from 21 to 22 while their college readiness benchmark score for science decreased from 24 to 23. The benchmark scores for English (18) and mathematics (22) were unchanged during the reporting period. In addition, starting in 2013, extended-time test takers are included in national and state scores. See [Table A4.2](#) in [Appendix 4](#) for supporting data. Data source: ACT, *High School Profile Report - Nebraska*, 2007, 2016, and 2017.

Changes in the Number of Students Who Took the ACT Assessment

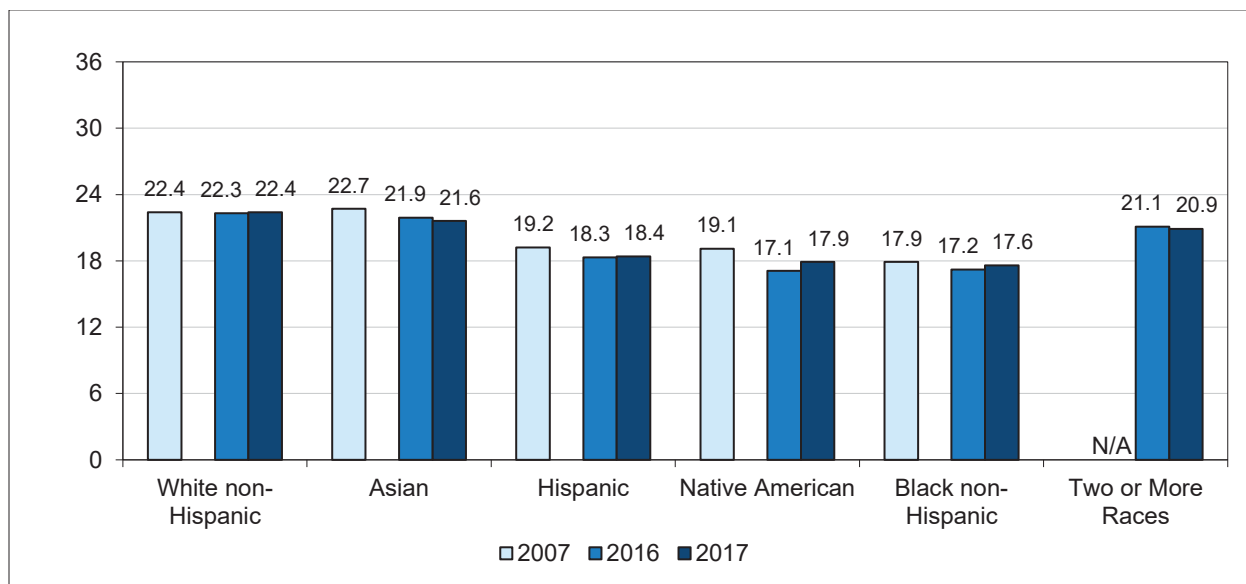
- Between 2016 and 2017, every racial/ethnic group saw an increase in the number of students who took the ACT Assessment.
- The largest increase in the number of students who took the ACT Assessment in 2017 was the increase in the number of Hispanics: 2,514 in the class of 2017, up from 2,324 in the class of 2016, an increase of 190 students (8.2%) in one year.
- See [Table A4.4](#) in [Appendix 4](#) for the number of students in each racial/ethnic group who took the ACT Assessment in 2007, 2016, and 2017.

ACT Composite Scores and College Readiness Percentages by Race/Ethnicity

- As shown in [Figure 1.1.b.5](#), average ACT composite scores vary by race/ethnicity.
- The average composite scores for Asians, Hispanics, Native Americans, black non-Hispanics, and multiracial persons who graduated from Nebraska high schools in 2007, 2016, and 2017 were generally lower than the average composite scores of their white non-Hispanic classmates. (The only exception were Asians who graduated in 2007.)
- Between 2016 and 2017, average composite scores increased 0.1 point for white non-Hispanics and Hispanics while Native Americans increased 0.8 point, and black non-Hispanics increased 0.4 point. Meanwhile, the average scores for Asians and multiracial students decreased 0.3 and 0.2 point, respectively.
- The average composite scores of white non-Hispanics remained unchanged between 2007 and 2017. Meanwhile, the average scores of Asians, Hispanics, Native Americans, and black non-Hispanics decreased 1.1, 0.8, 1.2, and 0.3 point respectively.
- It is unknown how much of the overall decline was attributable to the inclusion of extended-time test takers and students who took the ACT Assessment only because they were required to do so through the Nebraska ACT Pilot Project, and how much of the decline is attributable to other variables.

Figure 1.1.b.5

**Nebraska Average ACT Composite Scores by Race/Ethnicity
2016 and 2017 Compared to 2007**

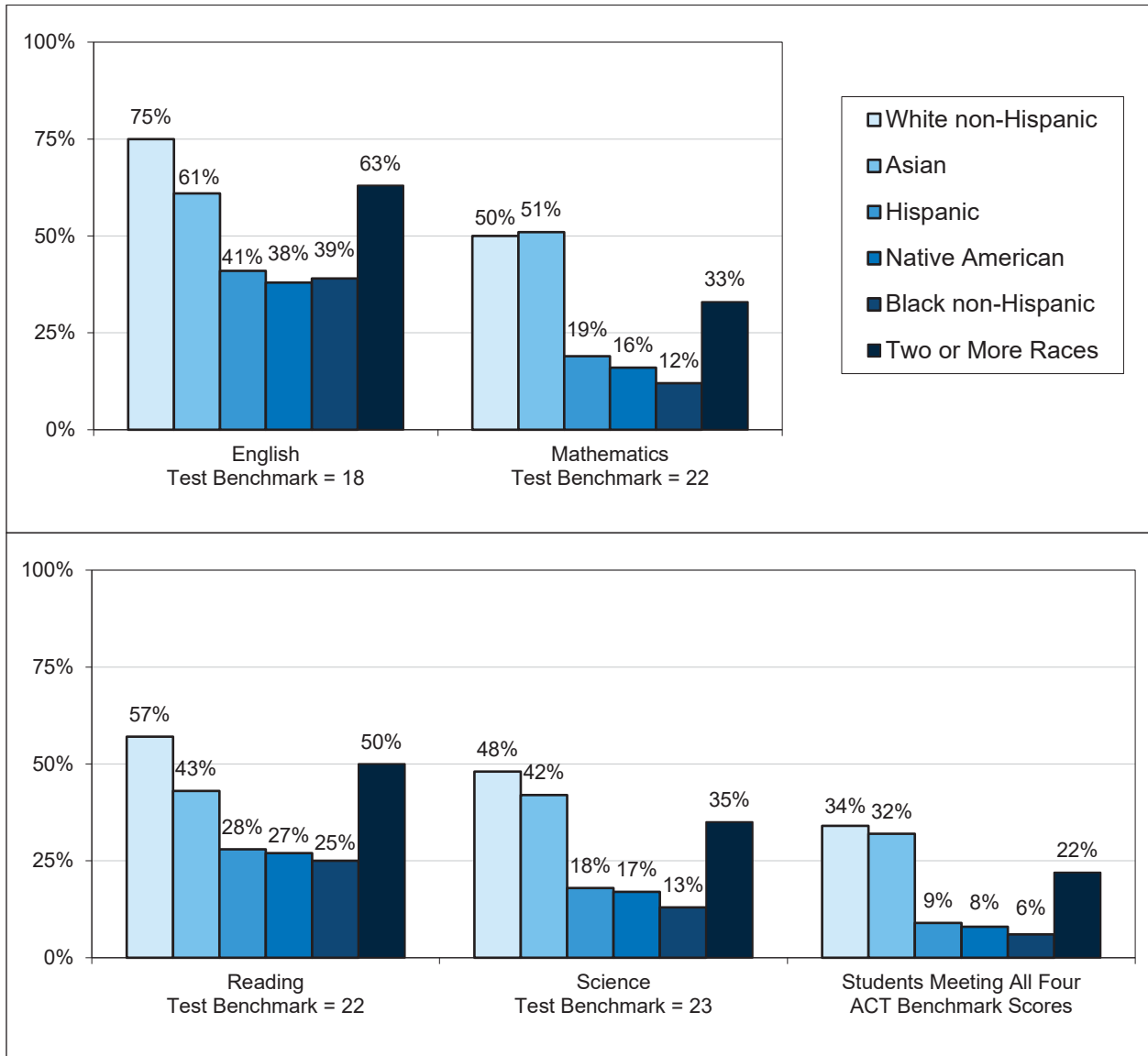


Note. Beginning with the graduating class of 2013, scores for extended-time test takers are included in reported ACT composite scores. Prior to 2011, the Asian category included Native Hawaiians and other Pacific Islanders. Average composite scores for Native Hawaiians and other Pacific Islanders are excluded from this figure due to the small number of individuals in this racial category who took the ACT Assessment. In 2016, 23 Native Hawaiians and other Pacific Islanders took the ACT Assessment with an average composite score of 17.1. In 2017, 23 Native Hawaiians and other Pacific Islanders took the ACT Assessment with an average composite score of 19.2. These students are not included in the calculation of the average composite score for Asians in 2016 or 2017. Prior to 2011, ACT did not have a racial/ethnic category for individuals who were more than one race. Data source: ACT, *High School Profile Report - Nebraska*, 2007, 2016, and 2017.

- Based on the data for the graduating class of 2017 summarized in [Figure 1.1.b.6](#), lower percentages of Hispanics, Native Americans, and black non-Hispanics are sufficiently prepared for college-level coursework compared to their white non-Hispanic, Asian, and multiracial classmates.
- For example, only 19% of the ACT-tested Hispanics in the class of 2017 met or exceeded the ACT College Readiness Benchmark Score in mathematics, compared to 50% of the white non-Hispanic students, 51% of the Asian students, and 33% of the multiracial students. More dramatically, only 16% of the ACT-tested Native Americans and 12% of the ACT-tested black non-Hispanics met or exceeded the benchmark score in mathematics. A similar pattern is evidenced for the other three ACT subject-matter tests as well as the percentage of students who met all four ACT benchmark scores.
- In fact, 34% of white non-Hispanics, 32% of Asians, and 22% of multiracial students met or exceeded the benchmarks for all four subject-matter tests in 2017, while only 9% of Hispanics, 8% of Native Americans, and 6% of black non-Hispanics met or exceeded the benchmarks for all four subject-matter tests.

Figure 1.1.b.6

Percentages of ACT-Tested High School Students in the Graduating Class of 2017 Who Met or Exceeded ACT College Readiness Benchmark Scores that Indicate Sufficient Preparation for College-Level Courses by Race/Ethnicity



Note. Data for Native Hawaiians and other Pacific Islanders are excluded from this figure due to the small number of individuals in this racial category (23) who took the ACT Assessment. Data source: ACT, *High School Profile Report - Nebraska, 2017*.

The Importance of the ACT-Recommended High School Core Curriculum

ACT, Inc. defines the core, college-preparatory high school curriculum (i.e., the core) as consisting of four years of English and three or more years each of social studies, science, and mathematics (beginning with Algebra I). Specifically, the core is defined as consisting of the following courses:

- **4 years of English:** English 9, English 10, English 11, and English 12
- **3 years of Math:** Selected from Algebra I, Algebra II, Geometry, Trigonometry, and Calculus
- **3 years of Social Sciences:** Selected from American History, World History, American Government, Economics, Geography, and Psychology
- **3 years of Natural Sciences:** Selected from General/Physical/Earth Science, Biology, Chemistry, and Physics

When students register to take the ACT Assessment, they are asked to report the courses they have taken or plan to take before they graduate from high school. Based on the combinations of courses that students report they have taken or plan to take, ACT, Inc. conducts research to determine how taking the core—or more than the core—is related to scores on the ACT Assessment and academic achievement in college.

- The research conducted by ACT, Inc. has repeatedly confirmed that students who complete the high school core generally score higher on the ACT Assessment and are more likely to progress successfully through postsecondary education programs than students who do not complete the recommended core courses.
- Furthermore, research conducted by ACT, Inc. indicates that students who take rigorous courses beyond the recommended minimum number of core courses are even more likely to be ready for college than students who take the minimum core. This research indicates that students whose coursework beyond the core includes advanced courses in mathematics, such as trigonometry or calculus, as well as courses in biology, chemistry, and physics, are the likeliest of all high school students to be ready for college-level coursework.⁹

Consequently, it is important to monitor the average ACT composite scores of students who report that they completed the core—or more than the core—compared to the scores of students who report taking less than the minimum core courses.

Nebraska ACT Composite Scores of Students Who Take the ACT-Recommended Core and Students Who Take Less than the Core Curriculum

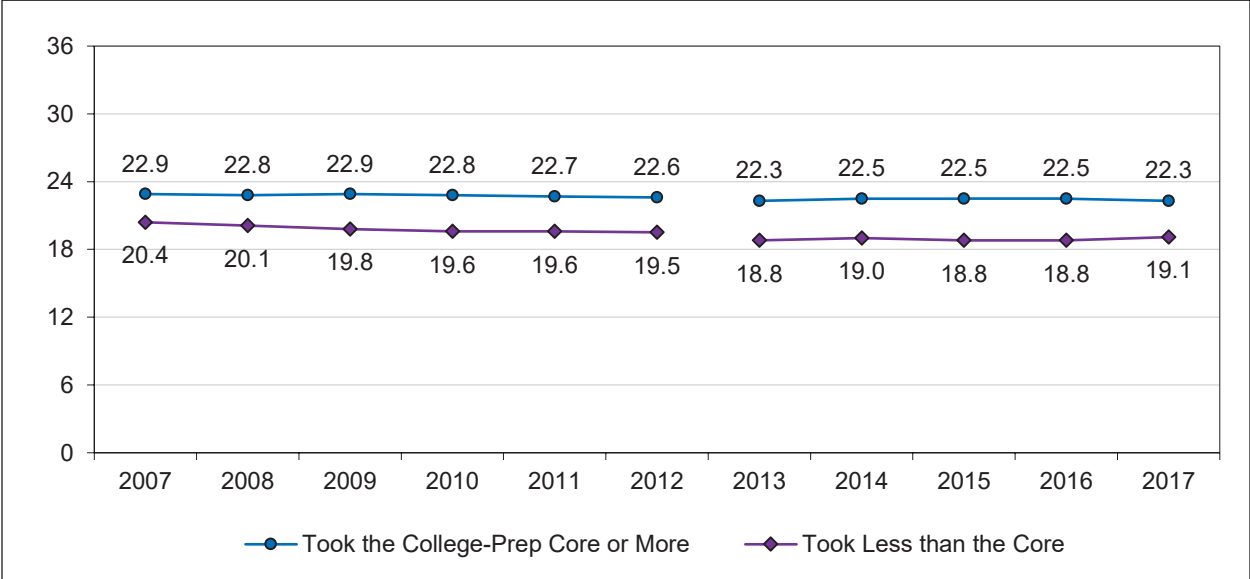
- As shown in [Figure 1.1.b.7](#), Nebraska students who have taken or plan to take the core college preparatory courses—or more than the core—in high school have consistently scored higher on the ACT than the students who have completed or plan to complete less than the minimum core.
- Of the ACT-tested students in the class of 2017, those who took the core or more had an average composite score of 22.3 compared to an average score of 19.1 for the students who reported that they took courses that did not meet the minimum core requirements.

⁹ Executive Summary, *Crisis at the Core: Preparing All Students for College and Work*, ACT, Inc., 2004, page 3.

- The average ACT composite score for the students who took the core or more was 0.6 point lower in 2017 than it was in 2007 while the average score for students who took less than the core was 1.3 points lower in 2017 than it was in 2007.
- Regardless of score variations, the data summarized in [Figure 1.1.b.7](#) provide strong evidence that taking the college-preparatory curriculum continues to have a positive effect on ACT composite scores and improves a student’s chances for achieving academic success in college-level courses.

Figure 1.1.b.7

Nebraska Average ACT Composite Scores of Students Who Took the College-Preparatory Core and Students Who Took Less than the Core 2007 through 2017



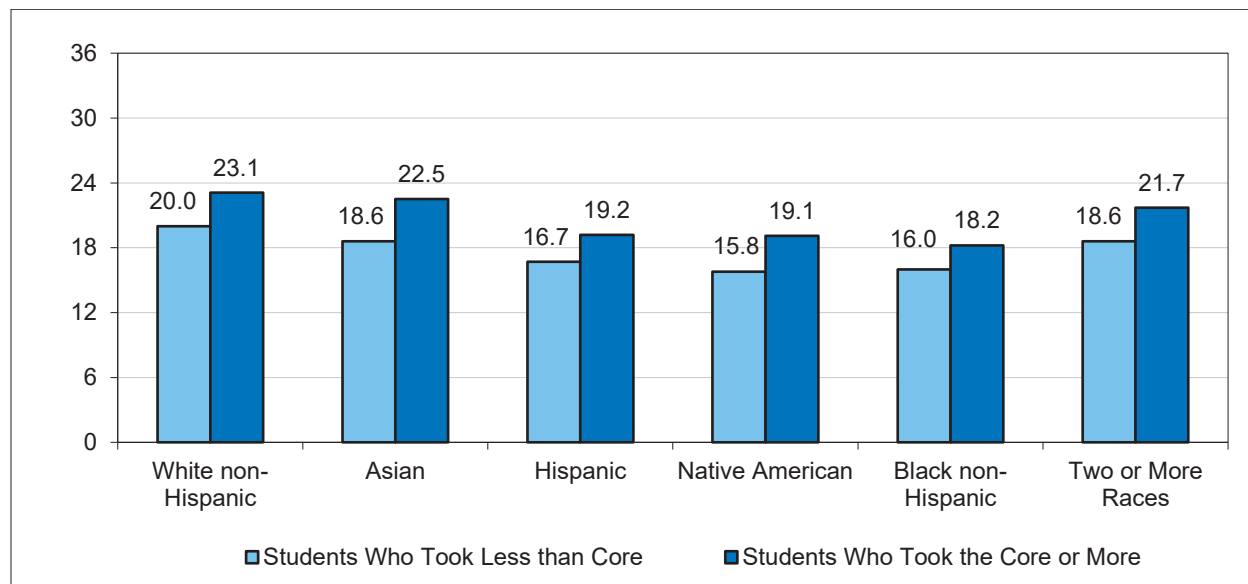
Note. Beginning with the graduating class of 2013, scores for extended-time test takers are now included in reported ACT composite scores. Data source: ACT, *High School Profile Report - Nebraska*, 2007 through 2017.

Note: Beginning with the 2014-2015 school year, Nebraska school districts are required to adopt and implement graduation requirements that include meeting standards similar to those represented by the core, college-preparatory high school curriculum advocated by ACT, Inc. Prior to adoption of the new statewide standards, Nebraska high school graduation requirements were set by each school district individually and may or may not have included “the core” as defined by ACT, Inc. Data source: Nebraska Department of Education, *Rule 10, Regulations and Procedures for the Accreditation of Schools* (pages 5-6), August 1, 2015.

- **Taking “the core or more” helps students of every race/ethnicity.** Within each of the six racial/ethnic groups, the average ACT composite score was higher for the students in the graduating class of 2017 who took the college-preparatory core than the average score for students who took less than the core, as illustrated in [Figure 1.1.b.8](#).

Figure 1.1.b.8

Nebraska ACT Composite Scores for Students Who Took the College-Preparatory Core or More and Students Who Took Less than the Core by Race/Ethnicity for the High School Graduating Class of 2017



Note. Data for Native Hawaiians and other Pacific Islanders are excluded from this figure due to the small number of individuals in this racial category (23) who took the ACT Assessment. Data source: ACT, *High School Profile Report - Nebraska*, 2017.

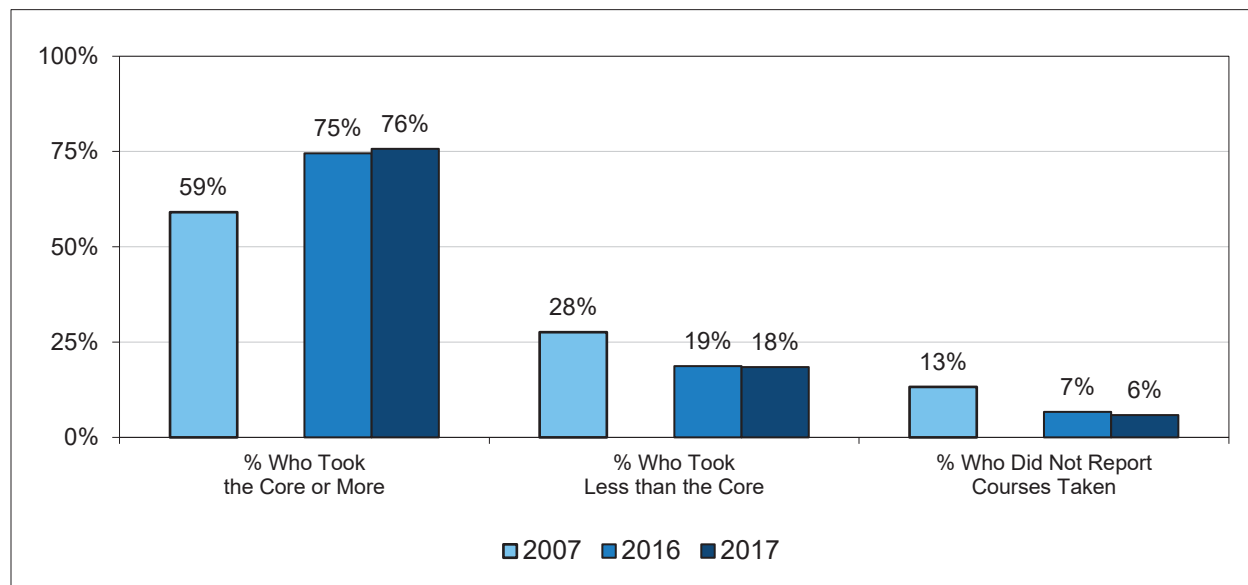
Percentage of Nebraska ACT-Tested Students Who Take the Core or More

As mentioned earlier in this section, the students themselves report the courses they have taken and plan to take before they graduate from high school when they register for the ACT Assessment. Self-reporting may make the data less accurate and/or less reliable. However, the percentage of ACT-tested students who reported the courses they took or planned to take in high school was 87% in 2007, 93% in 2016, and 94% in 2017.

- A direct comparison of 2007, 2016, and 2017 percentages indicates that the percentage of high school students who took the core or more increased noticeably over the past 10 years. As shown in [Figure 1.1.b.9](#), the percentage of students who reported that they took the core or more was 17 percentage points higher in 2017 than in 2007.

Figure 1.1.b.9

Percentages of Nebraska's ACT-Tested Students Who Took the College-Preparatory Core or More and Students Who Took Less than the Core 2016 and 2017 Compared to 2007

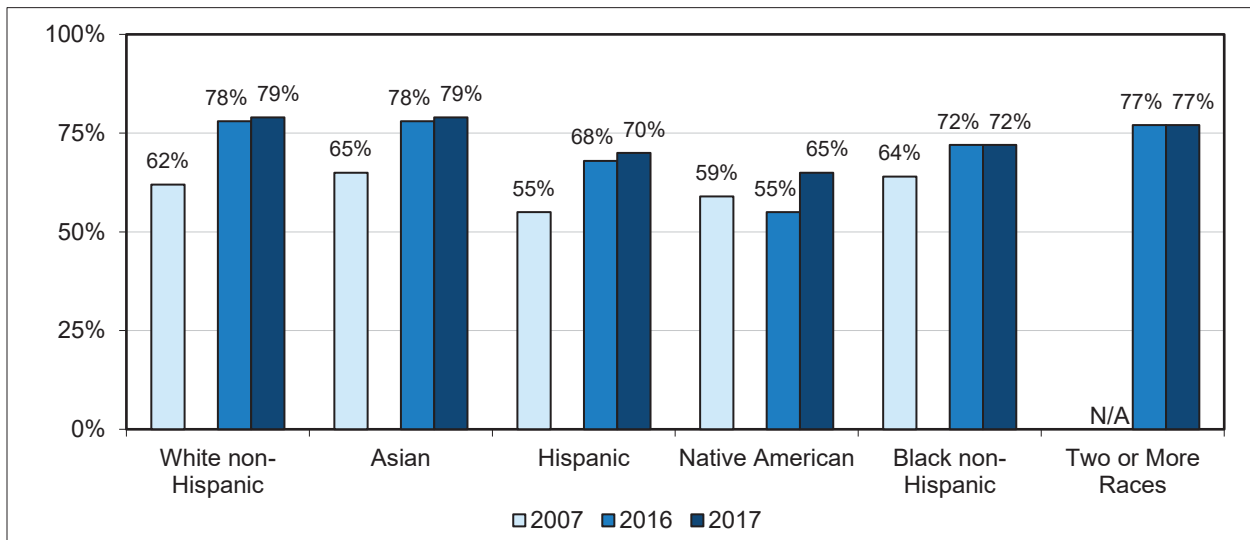


Note. Beginning with the graduating class of 2013, scores for extended-time test takers are included in reported ACT composite scores. See [Table A4.3](#) in [Appendix 4](#) for supporting data. Data source: ACT, *High School Profile Report - Nebraska, 2007, 2016, and 2017*.

- [Figure 1.1.b.10](#) shows that for all major racial/ethnic groups, there has been a general increase since 2007 in the percentage of the ACT-tested students who have reported taking the core or more in high school.
- As shown in [Figure 1.1.b.11](#), lower percentages of Native American and black non-Hispanic high school graduates in Nebraska have been taking the ACT Assessment than their white non-Hispanic, Asian/Pacific Islander, Hispanic, and multiracial classmates.
- Between 2016 and 2017, ACT participation rates increased for white non-Hispanics, Native Americans, and black non-Hispanics.
- Comparing the graduating classes of 2016 and 2017 to the number of students who took the ACT Assessment reveals a disconnect between the coding of multiracial students in NDE's records and the coding of multiracial students in ACT's records.
 - NDE's records indicate there were 598 multiracial students in the graduating class of 2016, and ACT's records indicate that 691 multiracial students in the graduating class of 2016 took the ACT.
 - NDE's records indicate there were 681 multiracial students in the graduating class of 2017, and ACT's records indicate that 711 multiracial students in the graduating class of 2017 took the ACT.

Figure 1.1.b.10

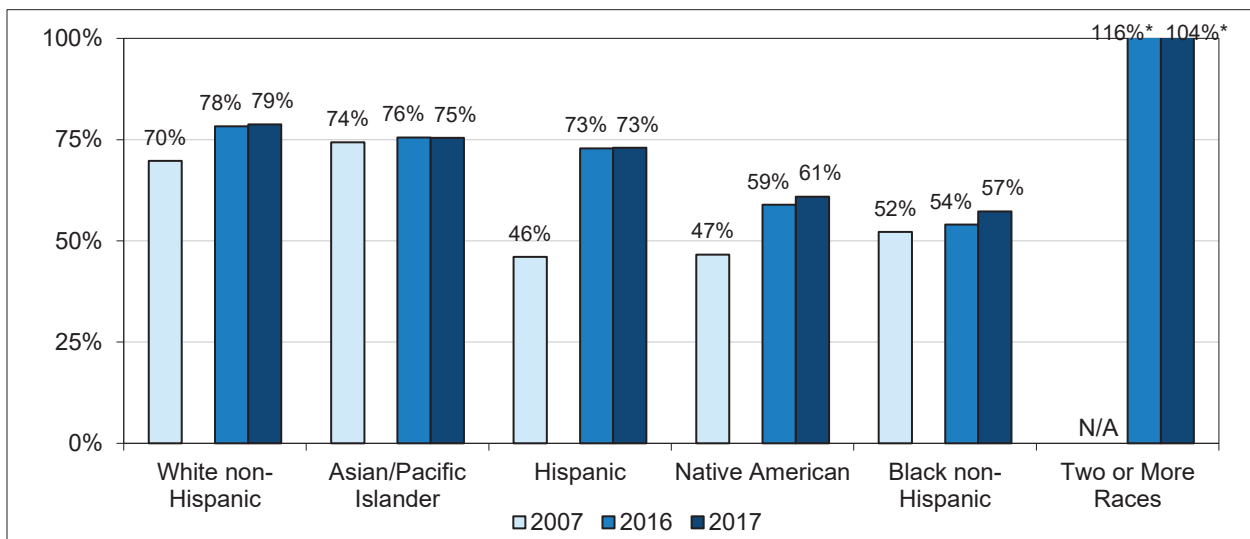
Percentage of Nebraska ACT-Tested Students Who Reported That They Took the College-Preparatory Core or More by Race/Ethnicity 2016 and 2017 Compared to 2007



Note. Beginning with the graduating class of 2013, scores for extended-time test takers are included in reported ACT composite scores. Prior to 2011, ACT did not have a racial/ethnic category for individuals who were more than one race. Data for Native Hawaiians and other Pacific Islanders are excluded from this figure due to the small number of individuals in this racial category who took the ACT Assessment. Data source: ACT, *High School Profile Report - Nebraska*, 2007, 2016, and 2017.

Figure 1.1.b.11

Percentage of Nebraska High School Graduates Who Took the ACT Assessment by Race/Ethnicity 2016 and 2017 Compared to 2007



Note. Beginning with the graduating class of 2013, scores for extended-time test takers are included in reported ACT composite scores. Asian graduates include Native Hawaiians and other Pacific Islanders, as well. Prior to 2011, ACT did not have a racial/ethnic category for individuals who were more than one race. See [Table A4.4 in Appendix 4](#) for supporting data. Data sources: Nebraska Department of Education and ACT, *High School Profile Report - Nebraska*, 2007, 2016, and 2017.

*It appears that some students categorized as multiracial according to ACT data were not categorized as multiracial according to NDE data.