Ulu o ka lā.
GROWTH OF THE SUN.

Said of the sunrise just as the sun’s rim touches the horizon.
KEY FINDINGS

Relative strengths/progress over time

PREKINDERGARTEN YEARS
Preschool enrollment among Native Hawaiians has increased. The percentage of Native Hawaiian three- and four-year-olds enrolled in preschool programs increased from 47.5 percent in 2000 to 53.8 percent in 2010. Kamehameha Schools-supported preschoolers (the only for whom we have access to test data) were less likely to score in the below-average range on a test of vocabulary development than were children in the national norm group: 14.2 percent scored in the below-average range compared with 23.0 percent nationally.

KINDERGARTEN THROUGH GRADE 12
Reading and mathematics proficiency rates among Native Hawaiian students (Grades 3, 5, 8, and 10) on the Hawai‘i State Assessment have increased over time.

• Reading proficiency among Native Hawaiian elementary school students increased from 50.8 percent proficient in SY 2006–07 to 61.6 percent in SY 2011–12. Similar gains were seen among middle school students. Increases at the high school level also occurred, although these were smaller.

• Mathematics proficiency among Native Hawaiian elementary school students increased from 33.4 percent proficient in SY 2006–07 to 55.9 percent in SY 2011–12. Again, similar increases were seen at the middle school level. Although smaller than at the elementary and middle school levels, gains in proficiency were seen at high school for Native Hawaiian and non-Hawaiian students.

Reading and mathematics proficiency gaps between Native Hawaiian and non-Hawaiian students have narrowed over time in certain grade levels.

• The reading proficiency gap in elementary school decreased from a high of 15.3 percentage points in SY 2007–08 to 11.6 percentage points in SY 2011–12.

• The reading proficiency gap in middle school decreased from 17.4 percentage points in SY 2006–07 to 11.5 percentage points in SY 2011–12.

• The mathematics proficiency gap in elementary school decreased from 15.8 percentage points in SY 2008–09 to 11.8 percentage points in SY 2011–12.

HAWAIIAN-FOCUSED CHARTER SCHOOLS
A longitudinal analysis of proficiency rates in a single cohort of Native Hawaiian students found that students who attend Hawaiian-focused charter schools showed improvement between elementary and middle school that was as strong as or stronger than that of Native Hawaiian students in conventional public schools.

• In reading, the proportion of Native Hawaiian charter school students who were proficient increased from 32.4 percent in Grade 4 to 57.7 percent in Grade 8, completely closing the gap with Native Hawaiian students in conventional public schools.

• In mathematics, the proportion of Native Hawaiian charter school students who were proficient increased from 18.6 percent in Grade 4 to 32.9 percent in Grade 8, an increase of 14.3 percentage points compared to a 12.6 point increase for Native Hawaiian students in conventional public schools.
Areas of concern

FAMILY RESOURCES
Research has shown that children with highly educated parents enter school better prepared for academic learning and subsequently achieve better academic outcomes than do children whose parents have lower levels of educational attainment. Native Hawaiian families with children were the least likely of the major ethnic groups in Hawai‘i to include a parent with a bachelor’s degree or higher.

PREKINDERGARTEN YEARS
Native Hawaiian children ages 0–4 in Wai‘anae, ‘Ewa–Waialua, and Hilo–Puna–Ka‘u were underrepresented in the population of Native Hawaiian preschoolers.

Kamehameha Schools-supported preschoolers were less likely to score in the above-average range on a test of vocabulary development than were children in the national norm group: 19.0 percent scored in the above-average range compared with 23.0 percent nationally.

KINDERGARTEN THROUGH GRADE 12
Reading proficiency rates ranged from a low of 53.4 percent in Grade 5 to a high of 58.6 percent in Grade 10 (compared with 63.1 to 69.7 percent at the same grade levels statewide).

Mathematics proficiency rates ranged from a low of 23.4 percent in Grade 10 to a high of 49.1 percent in Grade 3 (compared with 38.2 to 57.7 percent at the same grade levels statewide).

The mathematics proficiency gap between Native Hawaiian students and statewide averages increased with each successive grade level, from 8.6 percentage points in Grade 3 to 14.8 percentage points in Grade 10.

Fewer than three in four Native Hawaiians completed high school within four years, compared with four in five public school students statewide.

Native Hawaiians in the public school system had the lowest rates of timely graduation of all the major ethnic groups in the state.

CULTURE-BASED EDUCATION AND CHARTER SCHOOLS
Although longitudinal analyses suggest that they may achieve greater gains over time, as a group, Native Hawaiian students in Hawaiian-focused charter schools lagged behind their peers in conventional public schools. On the whole, the Hawaiian-focused charter school students were less likely to score at the proficient level in reading and mathematics than were their peers in traditional public schools.

POSTSECONDARY EDUCATION
Compared with Hawai‘i’s other major ethnic groups, Native Hawaiians were the least likely to be enrolled in college. A total of 25.7 percent of Native Hawaiian young adults were enrolled in college, compared with 35.7 percent statewide.

The gains in bachelor’s degree attainment rates among Native Hawaiian students made between 1990 and 2000 have plateaued over the last decade.

KEY IMPLICATIONS
There are many signs of progress in cognitive well-being over the last decade. Yet Native Hawaiians continue to lag behind their non-Hawaiian peers on key indicators of cognitive well-being, including reading and mathematics achievement, high school graduation, and postsecondary outcomes. Greater understanding of the personal, family, school, social-cultural, and political factors that promote or impede school success for Native Hawaiians is needed to develop programs and initiatives that eliminate disparities in educational outcomes. The identification and dissemination of successful methods used in Hawaiian culture-based education may help pave the way forward.
CHAPTER FIVE INTRODUCTION

Cognitive development is the process by which we make sense of the world. It includes the acquisition of language, the development of literacy and problem-solving skills, and the cultivation of critical thinking.

Cognitive development is highly correlated with the economic, physical, and emotional well-being of individuals (e.g., Reynolds et al. 2011). Families and communities are also healthier when their members make positive, timely strides toward the various milestones of healthy cognitive development. For example, higher levels of parent education are correlated with higher levels of education on the part of their children (Davis-Kean 2005). And, adults with higher levels of education are more likely to engage in service to their communities (Hillygus 2005).

Cognitive development begins long before a child first enters school and reaches far beyond the walls of traditional classrooms. Still, the facilitation and assessment of cognitive development—through pedagogy, curriculum, and school-administered, standardized tests—are a focal point of public and private schools in the United States. For this reason, academic success has become the primary marker of cognitive development in young children and adolescents.

This chapter presents educational outcomes for Native Hawaiians living in Hawai‘i. We begin by examining the educational resources of families and the effect of such resources on children’s educational prospects. From there, we look at school enrollment information, academic outcomes, and other available data in three main areas: prekindergarten, kindergarten to Grade 12, and postsecondary education. The chapter also includes a section on Hawaiian culture-based education, a topic of growing interest that holds great promise for Native Hawaiian students.

To fully understand the multiple factors that influence educational outcomes would require nuanced data and sophisticated analytical models that are beyond the scope of this report. Instead, we use available data to highlight the relationships between educational outcomes and the characteristics of families, students, and schools.

1. In this chapter, all education data from the US Census Bureau come from the American Community Survey 2006–10 file released in December 2011. The aggregation of five years of data counterbalances the small sample sizes for regional and sociodemographic subpopulations, allowing for more robust estimates of group characteristics. However, this method also reduces sensitivity to changes over time.
A popular truism in education is that “parents are a child’s first teachers.” Research has repeatedly demonstrated a strong correlation among parenting styles, family socioeconomic status, and educational outcomes. Using data from the Early Childhood Longitudinal Study, Duncan and Magnuson (2005) investigated the link between socioeconomic status and achievement at the beginning of children’s formal schooling. They identified family income, parental education, family structure, and neighborhood conditions as resources that are directly and significantly correlated with children’s achievement.

Here we present information on the education levels of parents of young children and school-age children. While few adults in Hawai’i have less than a high school diploma, the rate of college completion varies dramatically across the major ethnic groups. The data suggest that many Native Hawaiian children enter school without the advantages provided by higher levels of parental education.

In previous editions of Ka Huaka’i, households were identified by the race/ethnicity of the head of household. This approach was consistent with the definition employed by the US Census Bureau, but failed to account for the high rates of intermarriage in Hawai’i and, in particular, in the Native Hawaiian population. In Ka Huaka’i 2014, we changed the approach and identified the race/ethnicity of households by the race/ethnicity of all members of the household. While this “containing” methodology is more inclusive and more accurately reflects the diversity of the Native Hawaiian population, the results are not directly comparable to Ka Huaka’i 2005. Therefore, comparison tables based on the head-of-household method are provided in Appendix B, and the results are explained in bullet points below the following figures.

**FIGURE 5.1** Parent’s educational attainment in families with young children  
(as a percentage of all families with own children 4 years and younger, by race/ethnicity within household and by highest degree attained by parents, 2006–10, Hawai’i)

<table>
<thead>
<tr>
<th></th>
<th>Native Hawaiian</th>
<th>Chinese</th>
<th>Filipino</th>
<th>Japanese</th>
<th>Non-Hispanic White</th>
<th>Hawai’i Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than high school diploma</td>
<td>2.1</td>
<td>2.7</td>
<td>2.4</td>
<td>0.6</td>
<td>0.8</td>
<td>2.6</td>
</tr>
<tr>
<td>High school diploma</td>
<td>57.9</td>
<td>37.9</td>
<td>48.6</td>
<td>30.3</td>
<td>38.7</td>
<td>44.4</td>
</tr>
<tr>
<td>Associate’s degree</td>
<td>13.0</td>
<td>12.0</td>
<td>17.9</td>
<td>12.6</td>
<td>12.9</td>
<td>13.1</td>
</tr>
<tr>
<td>Bachelor’s degree or higher</td>
<td>27.0</td>
<td>47.4</td>
<td>31.0</td>
<td>56.5</td>
<td>47.7</td>
<td>39.9</td>
</tr>
</tbody>
</table>

• Among Native Hawaiian families with young children, slightly more than one-fourth (27.0 percent) included a parent with a bachelor’s degree or higher. This was the lowest rate among the major ethnic groups in Hawai‘i and was two-thirds of the statewide average (39.9 percent).

• Ten-year trends (see Appendix B) show an increase of 2.8 points in the percentage of Native Hawaiian-headed families with young children where at least one parent had a bachelor’s degree or higher (21.1 percent in 2000 versus 23.9 percent in 2010).

• The gains in parent educational attainment among families with young children headed by a Native Hawaiian (shown in Appendix B) lagged far behind the statewide increase of 8.2 percentage points (from 31.7 percent in 2000 to 39.9 percent in 2010).

**FIGURE 5.2** Parent’s educational attainment in families with school-age children

[as a percentage of all families with own children ages 5–17, by race/ethnicity within household and by highest degree attained by parents, 2006–10, Hawai‘i]

- Among Native Hawaiian families with school-age children, about one-fourth (24.5 percent) included a parent who had completed a bachelor’s degree or higher.

- Ten-year trends (see Appendix B) show an increase of 7.7 points in the percentage of Native Hawaiian-headed families with school-age children where at least one parent had a bachelor’s degree or higher (13.8 percent in 2000 versus 21.5 percent in 2010).

- The gain in educational attainment among Native Hawaiian-headed families with school-age children (shown in Appendix B) was comparable to the statewide increase of 7.8 percentage points (from 29.7 percent in 2000 to 37.5 percent in 2010).

Among Native Hawaiian-headed families with school-age children, 3.3 percent had parents who did not complete a high school diploma—a decrease of 4.3 percentage points since 2000 (shown in Appendix B) and slightly lower than the state average (3.6 percent).

Research shows that children with highly educated parents enter school better prepared for academic learning, with more developed skills in hand, and subsequently achieve better academic outcomes than do children whose parents have lower levels of educational attainment (Davis-Kean 2005, Haveman and Wolfe 1995). Studies also show that children from households with highly educated parents maintain their early academic advantage throughout their school careers (Magnuson 2007b). Since mothers tend to be the primary caregivers in the home—spending more time alone with children in qualitatively different roles than those of fathers or other males in the household—the mother’s level of education is a critical indicator predicting a child’s later academic success (Roska and Potter 2011).

The impact of a mother’s education plays out in the child’s earliest years. Magnuson (2007a) found that mothers who furthered their own education while their children were young (ages six to eight) created a positive impact on their children’s academic achievement that was much larger and more enduring than that of mothers who did so while their children were in the middle years (ages eight and older). Educational policy analysts therefore have advocated for increased focus on early childhood and investments in workforce training and literacy for young mothers and young families.

The following figures show educational attainment levels for mothers with children, demonstrating the need for increased access to higher education for Native Hawaiian mothers.

**FIGURE 5.3** Educational attainment of mothers with young children
[as a percentage of all mothers living with own children 4 years and younger, by race/ethnicity of the child and by highest degree attained, 2010, Hawai’i]

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Less than high school diploma</th>
<th>High school diploma</th>
<th>Associate’s degree</th>
<th>Bachelor’s degree or higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Hawaiian</td>
<td>7.2</td>
<td>66.0</td>
<td>18.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Chinese</td>
<td>1.8</td>
<td>48.7</td>
<td>35.1</td>
<td>5.4</td>
</tr>
<tr>
<td>Filipino</td>
<td>5.4</td>
<td>55.2</td>
<td>17.3</td>
<td>8.9</td>
</tr>
<tr>
<td>Japanese</td>
<td>1.8</td>
<td>37.9</td>
<td>10.8</td>
<td>5.2</td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>2.7</td>
<td>46.7</td>
<td>10.9</td>
<td>29.8</td>
</tr>
<tr>
<td>Hawai’i Total</td>
<td>5.8</td>
<td>52.4</td>
<td>12.0</td>
<td>29.8</td>
</tr>
</tbody>
</table>


2. At Kamehameha Schools, recent studies of student achievement for Native Hawaiians in preschool and elementary school show a stronger correlation between the mother’s education and student test scores than is the case with the father’s education (unpublished research).
• Mothers with young Native Hawaiian children had the lowest levels of educational attainment relative to mothers of young children among the major ethnicities in Hawai‘i.

• The rate of bachelor’s degree attainment among mothers with young Native Hawaiian children was 18.0 percent, compared with the statewide average of 29.8 percent.

• The highest level of educational attainment for three-fourths (74.9 percent) of all mothers with young Native Hawaiian children was a high school or associate’s degree.

• Among mothers of young children, mothers of young Native Hawaiian children were the most likely to not have a high school diploma (7.2 percent).

FIGURE 5.4 Educational attainment of mothers with school-age children
[as a percentage of all mothers living with own children ages 5–17, by race/ethnicity of the child and by highest degree attained, 2010, Hawai‘i]

• The educational attainment of mothers with school-age Native Hawaiian children was slightly higher than that of mothers with young Native Hawaiian children.

• The rate of bachelor’s degree attainment among mothers with school-age Native Hawaiian children was 19.0 percent, compared with the statewide average of 28.4 percent.

• About one out of every eighteen mothers with school-age Native Hawaiian children (5.5 percent) had less than a high school diploma.

THE PREKINDERGARTEN YEARS

The importance of cognitive development in the prekindergarten years cannot be overstated. Longitudinal research projects that began in the 1960s, such as the Perry Preschool Study (Schweinhart 2005), the Chicago Longitudinal Study (Reynolds et al. 2011), and the Abecedarian project (Campbell et al. 2002), have demonstrated the benefits of participation in a high-quality preschool program. These benefits include higher levels of educational attainment, higher earnings, and lower costs to society related to public assistance and incarceration. High-quality preschool education has also been shown to be an effective strategy to reduce the achievement gap between students at risk of educational underachievement and their more advantaged peers (Barnett 2008). Economists have documented the long-term value of investing in early childhood education as a preventive measure compared to later, remedial investments. As Heckman (2008, 52) notes, “Skills beget skills and capabilities foster future capabilities.”

Preschool Enrollment

Preschool enrollment is mediated by many factors, including financial costs, hours of service, perceived benefits of kith and kin versus out-of-home care, and access to available preschool spaces. Other important variables related to preschool are addressed in the American Community Survey (ACS) conducted by the US Census Bureau. Figure 5.5 uses these data to portray the distribution of preschool enrollment among the major ethnic groups in Hawai‘i. In the ACS data reported here, students are counted in each ethnic group they are identified with. That is, a Hawaiian-Chinese-Filipino student contributes to the count for each of those groups. Therefore, the sum of the groups exceeds 100.

FIGURE 5.5 Distribution of preschool students by race/ethnicity
[as a percentage of all children enrolled in preschool, 2006–10, Hawai‘i]

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Hawaiian</td>
<td>31.6</td>
</tr>
<tr>
<td>Chinese</td>
<td>21.7</td>
</tr>
<tr>
<td>Filipino</td>
<td>23.4</td>
</tr>
<tr>
<td>Japanese</td>
<td>25.8</td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>14.5</td>
</tr>
</tbody>
</table>

• Native Hawaiian was the most prevalent race/ethnicity among Hawai’i’s preschoolers.

• Between 2006 and 2010, almost one-third of children enrolled in preschool were Native Hawaiian (31.6 percent), commensurate with the proportion of all preschool-aged children in the state who are Native Hawaiian (31.2 percent).

• Japanese children comprised the second-largest proportion (25.8 percent) of preschoolers, while non-Hispanic Whites made up the smallest percentage (14.5 percent).

Figure 5.6 presents estimates for enrollment in preschool programs. Data are presented separately for three- and four-year-olds combined and for four-year-olds alone. This is because ages three and four are often thought of as “preschool-age” and there are specific targets in Hawai’i for preschool enrollment for four-year-olds. As shown in the figure, the rate of preschool enrollment among Native Hawaiian keiki, while promising, falls short of the state of Hawai’i’s target of 75 percent preschool enrollment among four-year-old children (Early Learning Educational Task Force 2008).

• Preschool enrollment has increased in the past decade. Between 2006 and 2010, more than one-half (53.8 percent) of Native Hawaiian three- and four-year-olds were enrolled in preschool programs, compared with 47.5 percent in 2000 (not shown).

• The enrollment rate for preschool among Native Hawaiians was on par with the state average for four-year-olds (63.5 percent and 63.6 percent, respectively) and was slightly higher than the state average for three- and four-year-olds in combination (53.8 percent and 52.5 percent, respectively).
Preschool enrollment varies widely by community. The distribution of preschool enrollment across communities is shown in Figure 5.7. Differences between the proportion of total preschool enrollment from a given region and the proportion of young Native Hawaiian children who live in that community may reflect disparities in access to preschool, rates of parental employment, and the prevalence of caregiving by extended family members.

**FIGURE 5.7** Distribution of Native Hawaiian preschoolers and preschool-age children by region
[as a percentage of all Native Hawaiian children enrolled in preschool, and as a percentage of all Native Hawaiians 4 years and younger, 2006–10, Hawai‘i]

- Three regions had higher-than-expected preschool enrollment. The Kona–Kohala–Hāmākua region had 9.5 percent of the Native Hawaiian preschoolers in the state and 6.4 percent of the children ages 4 and under. Similarly, Maui had 13.4 percent of the preschoolers and 11.2 percent of the young children, and Koʻolauloa–Koʻolaupoko had 14.1 percent of the preschoolers and 12.2 percent of the young children.
- Based on the distribution of Native Hawaiian children ages four and younger, Hilo–Puna–Kaʻū, ‘Ewa–Waialua, and Waiʻanae were underrepresented in the population of Native Hawaiian keiki enrolled in preschool.
- Out of all the Native Hawaiian keiki enrolled in preschool in Hawai‘i, the majority (60.0 percent) were found on Oʻahu.


*Note: Data for Lānaʻi and Niʻihau are either unavailable or too limited to yield reliable results.*
Outcomes

The educational and social benefits to keiki and society from participation in high-quality preschools are well documented (Campbell et al. 2002, Reynolds et al. 2011, Schweinhart 2005). Kamehameha Schools uses standardized assessments as one indicator of the quality of its preschool programs. At present, KS-supported preschoolers include children who attend any of the thirty KS preschool sites across the islands and those who participate in Pauahi Keiki Scholars, a scholarship program for children attending non-KS preschools.

Figure 5.8 shows test scores of KS-supported preschoolers at the end of the preschool year. The test used is the Peabody Picture Vocabulary Test (Version IV), which measures children’s receptive understanding of Standard American English. Results from this test are known to correlate well with later achievement test results in both reading and mathematics.

- KS-supported preschoolers were less likely to score in the below-average range than were preschoolers in the national population. A total of 14.2 percent scored in the below-average range, and 66.9 percent scored in the average range (compared nationally with 23.0 percent in the below-average range and 54.0 percent in the average range).
- Although the proportion of KS-supported preschoolers scoring in the above-average range fell short of national norms (19.0 percent versus 23.0 percent, respectively), pretest data (not shown) suggest that participants entered preschool well behind their peers at the national level and made significant gains relative to the norm over the course of the program.

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3. Although results for all Native Hawaiian keiki would be ideal, presently the only quantifiable and readily available evidence of the benefits of preschool for Native Hawaiian keiki comes from KS studies about its own preschool programs.
Access to formal education is widely viewed as critical for personal growth and for building a stable society and a competitive workforce. From kindergarten to Grade 12, participation in formal education is nearly universal in contemporary US society. Access to high-quality public education is considered a civil right in the United States (Office for Civil Rights 2011) and is defined as a basic human right by the United Nations (United Nations 1948).

The following data are drawn largely from the Hawai‘i Department of Education (Hawai‘i DOE).

Public and Private School Enrollment
With over 19 percent of all children ages 5–17 enrolled in private schools, Hawai‘i has the highest rate of private school participation in the United States. (The nationwide rate of private school enrollment is approximately 11 percent). Table 5.1 shows public and private school enrollment for Native Hawaiians according to ACS estimates from 2006 to 2010.

<table>
<thead>
<tr>
<th>School level</th>
<th>Public schools</th>
<th>Private schools</th>
<th>Not enrolled</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary school years: ages 5 to 11</td>
<td>83.3</td>
<td>13.8</td>
<td>2.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Middle school years: ages 12 to 14</td>
<td>78.9</td>
<td>20.3</td>
<td>0.9</td>
<td>100.0</td>
</tr>
<tr>
<td>High school years: ages 15 to 17</td>
<td>77.2</td>
<td>17.0</td>
<td>5.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total: ages 5 to 17</td>
<td>80.8</td>
<td>16.1</td>
<td>3.1</td>
<td>100.0</td>
</tr>
</tbody>
</table>


- Among Native Hawaiian children ages five to seventeen, 80.8 percent were enrolled in public schools, 16.1 percent were enrolled in private schools, and 3.1 percent were not enrolled in school.
- By comparison, among non-Hawaiian children ages five to seventeen (not shown), 75.9 percent were enrolled in public schools, 20.6 percent were enrolled in private schools, and 3.5 percent were not enrolled.
- One in seventeen (5.8 percent) Native Hawaiians between the ages of fifteen and seventeen was not enrolled in school compared to about one in twenty-one (4.7 percent) non-Hawaiians in this age group.
- Among Native Hawaiian students, the private school enrollment rate for middle school was 20.3 percent, compared with 13.8 percent for elementary school students.
- Patterns in enrollment in private schools among Native Hawaiians were similar to those for non-Hawaiian students with increasing rates of private school enrollment in upper grade levels. Non-Hawaiian enrollment in private schools was 19.4 percent in the elementary grades, 22.9 percent in the middle school grades, and 21.0 percent in the high school grades (not shown).
Kindergarten is not mandatory in Hawai‘i, and the relatively high percentage of five-year-olds not enrolled in school (7.9 percent according to the ACS) reflects this. The results of this same survey indicate that 76.4 percent of five-year-olds in Hawai‘i were enrolled in public schools, and 15.8 percent were enrolled in private schools (not shown).

The Hawai‘i DOE collects ethnicity data for its students based on parent reports. Historically, parents or guardians have been asked to identify one “dominant” ethnicity for their children. However, in 2011, the Hawai‘i DOE implemented a more inclusive approach to the collection of racial/ethnic data, allowing parents to select multiple races/ethnicities for their children while also asking for a single “primary” ethnicity that serves as the basis for reporting categories. A comparison of Hawai‘i DOE enrollment data and birth records—along with KS surveys that asked parents to report their children’s dominant ethnicity and, separately, whether or not their children are of Hawaiian ancestry—suggests that as many as 20 percent of children with Hawaiian ancestry in the public schools may not be identified as Native Hawaiian or part-Hawaiian in Hawai‘i DOE reports.4

Two concepts are important in understanding how Native Hawaiian students are represented in public schools in Hawai‘i: concentration and distribution. Concentration statistics refer to a subpopulation of students represented within a given region or grade level. Distribution statistics reveal how those students are dispersed across regions or grade levels.

Figure 5.9 shows the distribution of public school students across racial/ethnic categories using two different data sources and reporting systems: the Hawai‘i DOE and the ACS. Note, in the Hawai‘i DOE data, although students can report more than one ethnic ancestry, they are grouped by their self-identified “primary” ethnicity. In the ACS data reported here, students are counted in each ethnic group they are identified with. That is, a Hawaiian-Chinese-Filipino student contributes to the count for each of those groups.

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4. For more information on the Hawai‘i DOE’s data collection and reporting policies regarding race/ethnicity, see Appendix B.
More than one-quarter of public school students (27.9 percent) were identified by their parents as “primarily” Hawaiian or part-Hawaiian (based on data from the Hawai‘i DOE for school year 2011–12).

ACS 2010 data, which reported up to four races/ethnicities per respondent, reflected a slightly higher proportion, with nearly one-third of public school students (31.6 percent) reporting Native Hawaiian background. The gaps between the Hawai‘i DOE and ACS distributions are due in part to differences in their respective methods of data collection.

According to Hawai‘i DOE data, Native Hawaiians constituted the largest single ethnic group among public school students (27.9 percent), with Filipinos and non-Hispanic Whites representing the next largest groups (22.9 percent and 14.1 percent, respectively).

According to ACS 2010, Native Hawaiians represented the second-largest ethnic group within the public school system (31.6 percent), exceeded in size only by Filipinos (33.3 percent).

As shown in Figure 5.10, the proportion of public school students who identified as Native Hawaiian or part-Hawaiian increased substantially over the last three decades.
Native Hawaiian students were the most prevalent race/ethnicity within the public school system, representing more than one-fourth (28.1 percent) of all students in school year 2010–11.

Between school years 2000–01 and 2010–11, there was an increase of 2.0 percentage points in the proportion of parent-identified Native Hawaiian students (from 26.1 percent to 28.1 percent). The only other major ethnic group to grow in share over the same period was Filipinos (2.7 percentage points).

Native Hawaiians were the only major ethnic group that grew in relative size across each decade shown.

Between school years 1980–81 and 2010–11, the Japanese and White share of the public school population decreased by almost half. This was due in part to a large increase in the proportion of students of other ethnicities (from 13.9 percent in 1980 to 24.0 percent in 2010–11, not shown).

Source: Ka Huaka‘i 2005; Hawai‘i Department of Education SY 2010–11.
Figure 5.11 shows the concentration of Native Hawaiian children within each grade in the public school system.

**FIGURE 5.11** Concentration of Native Hawaiian public school students by grade
[as a percentage of all public school students, SY 2011–12, Hawai‘i]

- The concentration of Native Hawaiians in public schools in school year 2011–12 was highest in the elementary grades, hovering at or above 29.0 percent between Grades 1 and 5 and peaking at 30.0 percent in Grade 4.
- The concentration of Native Hawaiian students was generally lower in older cohorts, with small but notable dips apparent in the transitions from elementary to middle school (Grade 6) and from middle school to high school (Grade 9).
- Grades 11 and 12 contained the smallest percentage of Native Hawaiians (24.9 percent and 25.0 percent, respectively).
- The concentration of Native Hawaiians in Grade 12 was 4.0 percentage points lower than in Grade 1. This may be explained in part by the disproportionately high number of Native Hawaiian students leaving high school before graduation (see Figure 5.38 for a comparison of timely high school completion rates by race/ethnicity).
Figure 5.12 shows the concentration of Native Hawaiian students by region.

**FIGURE 5.12** Concentration of Native Hawaiian public school students by region  
[as a percentage of all public school students, SY 2011–12, Hawai’i]

- Moloka’i had the highest concentration of Native Hawaiian students in school year 2011–12 (80.2 percent).
- Approximately two out of every five public school students on Hawai’i Island were Native Hawaiian (43.5 percent in Hilo–Puna–Ka’ū and 39.0 percent in Kona–Kohala–Hāmakua).
- The concentration of Native Hawaiians was lowest in ‘Ewa–Waialua (17.7 percent) and Kona O’ahu (15.6 percent).

Areas with higher concentrations of Native Hawaiians do not always have greater numbers of Native Hawaiians. For example, a rural area with a small population that is predominantly Native Hawaiian may have lower numbers of Native Hawaiian inhabitants compared with an urban area with a large and ethnically diverse population. Figure 5.13 shows the distribution of Native Hawaiian public school students across regions. The majority of Native Hawaiian public school students (58.3 percent) attend school on O’ahu.

*Source:* Hawai’i Department of Education SY 2011–12.  
*Note:* Data for Ni’ihau are either unavailable or too limited to yield reliable results.
Among the Hawaiian Islands, O‘ahu had the highest number of Native Hawaiian public school students in school year 2011–12.

Nearly one out of every four Native Hawaiian public school students (22.3 percent) attended a school in the ‘Ewa–Waialua region.

Although the vast majority of public school students on Moloka‘i and Ni‘ihau were Native Hawaiian, they accounted for a small percentage of the total Native Hawaiian population in Hawai‘i’s public school system (2.1 percent and less than 0.1 percent, respectively).

Outcomes
Equality in educational outcomes is a major concern for Native Hawaiians. This section presents data on achievement test results and timely high school graduation.

In this section, outcome data are reported first by Hawai‘i’s five major ethnic groups to provide a clear picture of outcomes by ethnicity. The outcomes data are then presented by Native Hawaiian ancestry and community poverty rates (a rough indicator of socioeconomic status and access to resources). Finally, outcomes are reported by the concentration of Native Hawaiian students within schools (less than 25 percent, 25 to 50 percent, and over 50 percent or higher).

Because there is no shared repository of test scores for students in private schools, this section reports outcomes for public school students only.
Achievement Test Results

Two types of achievement test results are available for students in Hawai‘i public schools: standards-based and norm-referenced. The difference between these two types of tests can be explained by using an analogy of a group of climbers ascending a mountain. Standards-based tests tell us where a climber is on the mountain—near the peak, at the mid-level, or near the base. Norm-referenced tests tell us where a climber is relative to the other climbers—near the lead, in the middle, or near the rear.

Like all standardized assessments, the tests highlighted in this section have limitations. For example, the content of the test and the actual content taught in schools and in classrooms can vary dramatically. Furthermore, the restricted length and format of tests naturally limit the number of learning objectives they can assess and the ways questions can be asked and answered. Another limitation is the accuracy of the individual’s scores. Some students’ scores are higher than their true achievement levels (e.g., they may correctly guess answers to questions they don’t really know). At the same time, the scores of other students may be lower than their true achievement levels (e.g., they make mistakes in answering questions when they know the correct response). Standardized test scores are therefore an imperfect estimate of a student’s true knowledge and skills. Still, the results provide value as an approximation of student achievement relative to content and performance standards and relative to the scores of other students.3

Hawai‘i State Assessment: Proficiency

The Hawai‘i State Assessment (HSA) is a standards-based assessment and provides information about student performance relative to the Hawai‘i Content and Performance Standards. The HSA Reading and Mathematics tests are administered at Grades 3 through 8, and 10. Student results are reported in four categories: well-below proficiency, approaches proficiency, meets proficiency, or exceeds proficiency. To make the data easier to use, results reported here are aggregated into proficiency rates (i.e., the percentage who either meet or exceed proficiency) and limited to students in Grades 3, 5, 8, and 10.6

Figure 5.14 depicts the percentage of students who scored at or above the proficient level for reading on the HSA for the school years 2007–08 through 2011–12. These data are aggregated across several years to even out the effects of any particularly high or low achieving cohorts of students. The data are further grouped by student grades.

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5. See Popham (1999) for a fuller explanation of the limitations and uses of standardized assessments.
6. These grade levels mark the first standardized assessment at the end of Grade 3, a point at or near the end of elementary school (Grade 5), a point at the end of middle school (Grade 8), and the last systematic data collection before high school graduation (Grade 10).
HSA reading proficiency rates among Native Hawaiian students were lower than those of the other major ethnic groups in Hawai‘i, ranging from 53.4 percent to 58.6 percent. However, Native Hawaiian students in all grades made improvements since the period between school years 2001–02 and 2002–03 (not shown), when proficiency rates ranged from 26.1 percent to 30.8 percent.\(^7\)

For all major ethnic groups, except Whites, reading proficiency rates were lowest in Grade 5.

Native Hawaiian reading proficiency rates trailed the Hawai‘i average by 8.5 percentage points in Grade 3 and 11.1 percentage points in Grade 10.

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\(^7\) Changes in proficiency rates over time may, in part, be attributable to the revised set of Hawai‘i Content and Performance Standards (HCPS III) adopted in school year 2006–07, as well as annual reviews of proficiency cut scores.
The percentage of students who scored at or above the proficient level for mathematics on the HSA for the school years 2007–08 through 2011–12 is shown in Figure 5.15. Unlike the reading outcomes, there is a clear pattern of decreasing mathematics proficiency for students in upper grades for all ethnic groups.

**FIGURE 5.15 Mathematics proficiency**
[HSA mathematics scores at or above proficient level, as a percentage of all public school students tested, by race/ethnicity, for selected grades, SY 2007–08 to SY 2011–12 (combined), Hawai‘i]

- HSA mathematics proficiency rates among Native Hawaiians were lower than those of the other major ethnic groups in Hawai‘i, ranging from 23.4 percent (Grade 10) to 49.1 percent (Grade 3). However, all grades made improvements since school years 2001–02 to 2002–03 (not shown), when proficiency rates ranged from 7.5 percent to 13.0 percent.
- A pattern of lower mathematics proficiency rates at successively higher grades was apparent across all major ethnic groups in the state.
- The gap between Native Hawaiian mathematics proficiency rates and the Hawai‘i average is greater in successively higher grade levels shown, with a gap of 8.6 percentage points in Grade 3 compared with 14.8 percentage points in Grade 10.

Research has repeatedly demonstrated a link between poverty and educational achievement. In the next set of figures we look at proficiency rates by the level of poverty in the communities served by the schools. As a point of reference, the statewide poverty rate is 11.2 percent.8

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8. Clearly, the effects of poverty only partially explain the discrepancies in achievement between Native Hawaiian students and their non-Hawaiian peers. Poverty rates in these analyses are derived by school complex areas. See the Hawai‘i DOE description of the complex areas on the MySchool website (Hawai‘i State Department of Education).
• HSA reading proficiency rates were lower in communities with higher levels of poverty among both Native Hawaiian and non-Hawaiian students.

• Compared with non-Hawaiians, Native Hawaiians exhibited lower levels of reading proficiency across all levels of poverty in their communities.

Similar results are seen in the relationship between mathematics proficiency, community poverty, and Native Hawaiian ethnicity (see Figure 5.17).
• HSA mathematics proficiency rates were lower in communities with higher levels of poverty among both Native Hawaiian and non-Hawaiian students.

• Across all types of communities shown, mathematics proficiency rates were consistently lower for Native Hawaiians than non-Hawaiians.

• The largest gap between Native Hawaiian and non-Hawaiian mathematics proficiency rates (16.0 percentage points) was observed in communities where 10 to 20 percent of residents lived in poverty. This gap was 13.1 percentage points in communities with the lowest levels of poverty and 9.9 percentage points in communities with the highest levels of poverty.

Poverty and other factors that influence achievement are not distributed evenly across the islands. The tables presented below summarize reading and mathematics proficiency among Native Hawaiians by region.

<table>
<thead>
<tr>
<th>Region</th>
<th>Grade 3</th>
<th>Grade 5</th>
<th>Grade 8</th>
<th>Grade 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawai‘i Island</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hilo–Puna–Ka‘u</td>
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<td>48.4</td>
<td>56.9</td>
<td>52.6</td>
</tr>
<tr>
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<td>61.6</td>
<td>62.5</td>
</tr>
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<td>50.9</td>
<td>54.0</td>
<td>58.4</td>
</tr>
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<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
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<td>43.8</td>
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</tr>
<tr>
<td>O‘ahu</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Kona O‘ahu</td>
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<td>60.9</td>
<td>65.3</td>
<td>65.0</td>
</tr>
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<td>59.2</td>
<td>62.8</td>
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</tr>
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<td>Hawai‘i Total</td>
<td>57.0</td>
<td>53.4</td>
<td>58.3</td>
<td>58.6</td>
</tr>
</tbody>
</table>

Source: Hawai‘i Department of Education SY 2007–08 to SY 2011–12.

• The lowest HSA reading proficiency rates for Native Hawaiians were in Wai‘anae (Grades 3 and 5) and on Moloka‘i (Grades 8 and 10).

• Wai‘anae was the only area in which Native Hawaiian reading proficiency rates at all grades shown were below 50 percent.
• HSA mathematics proficiency rates among Native Hawaiians were lower at successively higher grade levels, with a statewide difference of 25.7 percentage points between Grade 3 and Grade 10.
• This pattern of lower proficiency rates at higher grades was apparent on all islands.
• Across all grades shown, the highest mathematics proficiency rates among Native Hawaiians (with the exception of Moloka‘i) occurred in Grade 3; the lowest were in Grade 10.
• Wai‘anae exhibited the lowest mathematics proficiency rate in each grade shown except Grade 8, ranging from 15.4 percent in Grade 10 to 38.4 percent in Grade 3.

Closing the gap in proficiency between Native Hawaiian students and their peers is critical to the future well-being of Hawai‘i in general and Native Hawaiians in particular. The next set of figures illustrates the gap in HSA proficiency rates at the elementary, middle, and high school levels from school years 2002–03 to 2011–12.9

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9. During the time frame covered by these figures, the Hawai‘i DOE adopted a revised set of standards. The scores shown therefore span two different versions of the HSA that measure two different sets of standards: the Hawai‘i Content and Performance Standards (HCPS) II and III. In addition, trends may be influenced by annual reviews of the cut scores used to determine proficiency.
In Hawai‘i elementary schools, HSA reading proficiency rates among both Native Hawaiian and non-Hawaiian students increased significantly and consistently from school year 2002–03, with the only major decrease in year-over-year averages occurring between 2004–05 and 2005–06.

The gap between Native Hawaiian and non-Hawaiian reading proficiency rates in elementary schools decreased gradually from 13.7 percentage points in school year 2006–07 to 11.6 percentage points in 2011–12.

Source: Hawai‘i Department of Education SY 2002–03 to SY 2011–12.
In Hawai‘i middle schools, the shift from HCPS II to HCPS III was marked by a surge in reading HSA proficiency rates among both Native Hawaiian and non-Hawaiian students. It is likely that this upswing reflects changes in the test and cut scores, rather than actual gains in reading.

Since implementation of HCPS III testing in school year 2006–07, proficiency rates among Native Hawaiian and non-Hawaiian middle school students increased steadily until 2010–11, at which point Native Hawaiian averages decreased from 63.2 percent to 55.4 percent and non-Hawaiian averages from 75.2 percent to 70.0 percent. However, in the following year, scores for both groups rebounded and nearly matched the 2009–10 peaks.

Since adoption of HCPS III, the gap in reading proficiency among Native Hawaiian and non-Hawaiian middle school students has steadily decreased, from 17.4 percentage points in school year 2006–07 to 11.5 percentage points in 2011–12. This trend was interrupted only briefly in 2010–11—the same year the anomalous decrease in proficiency rates occurred.

Source: Hawai‘i Department of Education SY 2002–03 to SY 2011–12.
In Hawai‘i high schools, the gap between the HSA reading proficiency rates of Native Hawaiian and non-Hawaiian students increased from 17.9 percentage points in school year 2002–03 to 20.1 percentage points in 2005–06 (using HCPS II standards).

Since the shift to HCPS III in school year 2006–07, the gap in high school reading proficiency and the proficiency rates themselves have fluctuated from year to year with no clear pattern. However, consistencies in the shape of the Native Hawaiian and non-Hawaiian trend lines suggest that the gap has persisted over time.
In Hawai‘i elementary schools, HSA mathematics proficiency rates among Native Hawaiian and non-Hawaiian students increased significantly and consistently from school year 2002–03, with the only notable decrease in year-over-year averages occurring between 2007–08 and 2008–09.

The mathematics proficiency gap between Native Hawaiian and non-Hawaiian elementary school students declined, from its peak of 15.8 percentage points in school year 2008–09 to a ten-year low of 11.8 percentage points in 2011–12.

Source: Hawai‘i Department of Education SY 2002–03 to SY 2011–12.
In Hawai‘i middle schools, HSA mathematics proficiency rates among Native Hawaiians and non-Hawaiians followed a trend similar to that seen among elementary school students, with steady increases apparent throughout the last ten years.

In school year 2011–12, the mathematics proficiency rate for Native Hawaiian middle school students was roughly eight times the rate seen in 2002–03 (45.2 percent versus 5.9 percent, respectively). The non-Hawaiian rate tripled over the same period (from 20.8 percent in school year 2002–03 to 63.1 percent in 2011–12).

Although differences in the mathematics proficiency rates of Native Hawaiian and non-Hawaiian middle school students have fluctuated from year to year, the gap has generally increased since the implementation of HCPS III, from an average of 13.6 percentage points between school years 2002–03 and 2005–06 to an average of 17.2 percentage points between school years 2006–07 and 2011–12.

Source: Hawai‘i Department of Education SY 2002–03 to SY 2011–12.
In Hawai‘i high schools, HSA mathematics proficiency rates among Native Hawaiian and non-Hawaiian students increased steadily from school year 2006–07—from 14.3 percent to 30.9 percent among Native Hawaiians and from 34.3 percent to 51.0 percent in non-Hawaiians.

Among high school students, the shift to HCPS III was associated not only with gains in mathematics proficiency but also with a persistent gap of about 20 percentage points between the proficiency rates of Native Hawaiians and non-Hawaiians.

The previous figures have looked at reading and mathematics proficiency rates across several cohorts of students. The figures below track the progress of a single cohort of students from Grade 4 through Grade 8. This longitudinal analysis is promising because it indicates that the pattern of lower mathematics achievement in the upper grades may be reversing. It also suggests that additional years of instruction in the public school system may lead to greater proficiency among Native Hawaiian and non-Hawaiian students.
The HSA reading proficiency rates among Native Hawaiian students were the lowest among those of the major ethnic groups in this cohort at all grades shown.

Among Native Hawaiian students, the reading proficiency rate increased from 36.3 percent in Grade 4 to 55.6 percent in Grade 8.

The gap between the reading proficiency rates of Native Hawaiian students and the statewide average decreased from 14.1 percentage points in Grade 4 to 12.2 percentage points in Grade 8.

The gains made relative to statewide averages are particularly important because previous longitudinal studies showed an increasing gap in scores between Native Hawaiian and other students as they moved up in grade (Tibbetts 2002, Kana'iaupuni and Ishibashi 2003).

Similar progress is apparent in mathematics proficiency rates.
FIGURE 5.25 Longitudinal trends in mathematics proficiency within a single cohort of public school students
[HSA mathematics scores at or above proficient level, as a percentage of all public school students in the cohort tested
in Grades 4, 6, and 8, by race/ethnicity, for selected grades, selected years, Hawai‘i]

- The HSA mathematics proficiency rates of Native Hawaiians were the lowest among those of the major
  ethnic groups in this cohort at all grades shown.
- Despite a small dip in rates at Grade 6, Native Hawaiians within this cohort achieved significant gains
  in mathematics by the end of middle school, with proficiency rates that increased from 30.6 percent in
  Grade 4 to 42.4 percent in Grade 8.
- The gap between Native Hawaiian students and the statewide average decreased slightly over time,
  from 14.2 percentage points in Grade 4 to 13.3 percentage points in Grade 8.
- The gains made relative to statewide averages are particularly important because previous longitudi-
  nal studies showed an increasing gap in scores between Native Hawaiian and other students as they
  moved up in grade (Tibbetts 2002, Kana‘iaupuni and Ishibashi 2003).

TerraNova: Rankings Relative to National Norms
TerraNova is a norm-referenced test that assesses student performance relative to nationwide outcomes.
TerraNova’s Reading and Mathematics tests were administered in Hawai‘i public schools during the
2010–11 school year in Grades 3 through 8 and Grade 10.¹⁰

TerraNova results are reported here as percentile ranks of the average Normal Curve Equivalent scores
(i.e., the percentage of students nationally who scored lower than the average student in Hawai‘i public
schools). As with the HSA, results are reported for students in Grades 3, 5, 8, and 10 to make the data
presentation easier to use.

¹⁰ TerraNova testing was discontinued in school year 2011–12 as the Hawai‘i DOE prepared for shifts in testing consistent with
Common Core requirements.
Figure 5.26 shows TerraNova reading results aggregated across school years 2006–07 through 2010–11. As with the HSA, these data are aggregated across several years to even out the effects of any particularly high- or low-achieving cohorts of students.

**FIGURE 5.26** Reading achievement among public school students
[percentile rank of mean TerraNova reading scores, by race/ethnicity, for selected grades, SY 2006–07 to SY 2010–11 (combined), Hawai‘i]

- TerraNova reading test scores among Native Hawaiian students were lower than those of the other major ethnic groups in Hawai‘i. In each grade shown, the average reading scores of Native Hawaiian students lagged behind statewide averages by 8 to 11 percentile points.
- The reading scores of Native Hawaiian students were an average of 11.0 percentile points lower than the national mean (i.e., the 50th percentile).
- Across all major ethnic groups in Hawai‘i, Grade 10 scores averaged 4 to 6 percentile points lower than Grade 8 scores.

Source: Hawai‘i Department of Education SY 2006–07 to SY 2010–11.
Figure 5.27 shows TerraNova mathematics results aggregated across school years 2006–07 through 2010–11.

**FIGURE 5.27** Mathematics achievement among public school students  
[percentile rank of mean TerraNova mathematics scores, by race/ethnicity, for selected grades, SY 2006–07 to SY 2010–11 (combined), Hawai‘i]

- TerraNova mathematics scores among Native Hawaiian students were lower than those of the other major ethnic groups in Hawai‘i. In each grade tested, the average mathematics score of Native Hawaiian students lagged behind total state averages by 8 to 13 percentile points.

- The mathematics scores of Native Hawaiian students were an average of 6.8 percentile points lower than the mean nationwide score (i.e., the 50th percentile), a smaller gap than was apparent in reading scores (Figure 5.26).

- Across all major ethnic groups, mathematics averages at Grade 8 were 9 to 14 percentile points lower than those at Grade 5. Among Native Hawaiians, the mathematics average in Grade 10 was just 1 percentile point higher than in Grade 8. By comparison, the statewide average in Grade 10 exceeded the Grade 8 average by 3 percentile points.

Source: Hawai‘i Department of Education SY 2006–07 to SY 2010–11.
Another way of displaying norm-referenced results is to group the data into achievement bands. The figures below use standard conventions to classify student performance in below-average, average, and above-average ranges. Based on national norms, we would expect to see 23 percent of students scoring in the below-average range, 54 percent scoring in the average range, and 23 percent scoring in the above-average range.

Figure 5.28 shows reading achievement as being close to national norms for non-Hawaiian students but not for Native Hawaiian students.

**Figure 5.28** Distribution of reading achievement scores by grade  
[as a percentage of all TerraNova reading scores, by Native Hawaiian and non-Hawaiian, SY 2006–07 to SY 2010–11 (combined), Hawai‘i]

- Native Hawaiians were more likely to perform in the below-average range for reading than were their non-Hawaiian peers.
- The gap between the proportion of Native Hawaiians and non-Hawaiians with below-average scores was greater among students in higher grades, increasing from 8.4 percentage points for third-graders to 11.1 percentage points for tenth-graders.
- The percentage of Native Hawaiian students scoring in the above-average range was lower at higher grades, accounting for 14.5 percent of third-graders compared with 8.7 percent of tenth-graders.

Even greater disparities in achievement are seen for mathematics (see Figure 5.29.)
The percentage of Native Hawaiian students scoring in the above-average range for mathematics trailed that of non-Hawaiians by 9.4 points in Grade 3 and 16.9 points in Grade 10.

Similarly, the percentage of Native Hawaiian students scoring in the below-average range was higher than for non-Hawaiians, ranging from 8.4 points in Grade 3 to 11.6 points in Grade 10.

The next two figures depict the relationship between Native Hawaiian ethnicity, achievement outcomes, and community poverty. As with the HSA results, when we compare achievement for students in schools with similar levels of poverty, there is still a residual difference between the achievement of Native Hawaiian and non-Hawaiian students.
• TerraNova reading scores of students attending schools in high-poverty communities—regardless of ethnicity—were less likely to be above average and more likely to be below average compared with the test scores of their less-impovertished peers.

• At each poverty level, Native Hawaiians were less likely than their non-Hawaiian counterparts to score in the above-average range for reading.
FIGURE 5.31 Distribution of mathematics achievement scores by community poverty level
[as a percentage of all TerraNova mathematics scores for students tested in Grades 3, 5, 8, and 10 (combined), by Native Hawaiian and non-Hawaiian, by poverty level in complex area, SY 2010–11, Hawai‘i]

- TerraNova mathematics scores of students living in high-poverty communities were less likely to be above average and more likely to be below average compared with their peers in less-impoverished communities.

- Regardless of the level of poverty, Native Hawaiians were less likely to score in the above-average range for mathematics than were non-Hawaiian students.

Poverty and other factors that influence student achievement are not distributed evenly across the state. The tables presented below look at percentile rankings of mean scores for Native Hawaiians in reading and mathematics by region.
Mean TerraNova reading scores among Native Hawaiian public school students were below the national norm (i.e., the 50th percentile) across all regions and grades shown.

With the exception of Wai'anae and Moloka'i, the lowest reading scores in each region shown occurred at Grade 10.

Although Wai'anae had the lowest regional reading scores in Grades 3, 5, and 10, Wai'anae’s Grade 10 average was 6 percentile points higher than its Grade 3 average.

### TABLE 5.4 Reading achievement among Native Hawaiian students by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Grade 3</th>
<th>Grade 5</th>
<th>Grade 8</th>
<th>Grade 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawai'i Island</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hilo–Puna–Ka'ū</td>
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<td>40</td>
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</tr>
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<td>Kona–Kohala–Hāmākua</td>
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</tr>
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<td>Hawai'i Total</td>
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<td>36</td>
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</table>

Source: Hawai'i Department of Education SY 2006–07 to SY 2010–11.
Note: Data for Lāna'i and Ni'ihau are either unavailable or too limited to yield reliable results.
Mean TerraNova mathematics scores among Native Hawaiian public school students were highest at Grade 5 across all areas shown.

Native Hawaiian mathematics scores at Grade 5 ranged from the 40th percentile in Wai‘anae to the 55th percentile in Kona O‘ahu, Ko‘olauloa–Ko‘olaupoko, and Moloka‘i.

Wai‘anae exhibited the lowest average mathematics score among all regions shown, except at Grade 10, where both Hilo–Puna–Ka‘u and Wai‘anae averaged at the 32nd percentile.

For all areas shown except Wai‘anae, the average mathematics scores among Native Hawaiian students in Grade 10 were 2 to 7 percentile points lower than the averages in Grade 3. In Wai‘anae, the Grade 10 average was 2 percentile points higher than the Grade 3 average.

Just as we previously examined gaps in the proficiency rates of Native Hawaiian and non-Hawaiian students, we turn now to the achievement gap in norm-referenced scores—and find trends that tend to be more stable over time compared with standards-based proficiency measures.
FIGURE 5.32  Trends in reading achievement among public elementary school students [percentile rank of mean SAT-9 and TerraNova reading scores of students tested in Grades 3 and 5 (combined), by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2010–11, Hawai‘i]

- In Hawai‘i elementary schools, the mean reading scores of Native Hawaiian and non-Hawaiian students increased significantly in school year 2010–11 after years of relatively flat trends.
- Between school years 2002–03 and 2010–11, Native Hawaiian elementary school students made progress toward closing the reading achievement gap with their non-Hawaiian peers. The gap was 16 percentile points in 2002–03 and 13 percentile points in 2010–11.

Source: Hawai‘i Department of Education SY 2002–03 to SY 2010–11.
FIGURE 5.33  Trends in reading achievement among public middle school students
[percentile rank of mean SAT-9 and TerraNova reading scores of students tested in Grade 8, by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2010–11, Hawai‘i]

- In Hawai‘i middle schools, Native Hawaiian and non-Hawaiian students demonstrated an increase in mean reading scores between school years 2002–03 and 2010–11 (17 percentile points and 13 percentile points, respectively).
- The reading achievement gap between Native Hawaiian and non-Hawaiian middle school students decreased from 16 percentile points in school year 2002–03 to 12 percentile points in 2010–11.

Source: Hawai‘i Department of Education SY 2002–03 to SY 2010–11.
In Hawai‘i high schools, mean reading scores for Native Hawaiian high school students increased 17 percentile points between school years 2002–03 and 2010–11, while the scores of their non-Hawaiian peers increased 21 percentile points over the same period. Some of these gains are likely attributable to the shift from the SAT-9 assessment to TerraNova in school year 2006–07; however, reading scores also increased during the course of TerraNova’s use, between 2006–07 and 2010–11.

The reading achievement gap between Native Hawaiian and non-Hawaiian high school students held steady at 10 to 12 percentile points between 2002–03 and 2005–06 but increased slightly since the switch to the TerraNova assessment.

Source: Hawai‘i Department of Education SY 2002–03 to SY 2010–11.
In Hawai‘i elementary schools, the mean mathematics scores of Native Hawaiian students generally followed the same trend as that of their non-Hawaiian peers.

Since 2006–07, the mathematics scores of Native Hawaiian and non-Hawaiian elementary school students increased by 17 percentile points.

The mathematics achievement gap between Native Hawaiian and non-Hawaiian elementary school students remained at roughly 13 percentile points from school year 2006–07 through 2010–11.
FIGURE 5.36  Trends in mathematics achievement among public middle school students  
[percentile rank of mean SAT-9 and TerraNova mathematics scores of students tested in Grade 8, by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2010–11, Hawai‘i]

- In Hawai‘i middle schools, the mean mathematics scores of Native Hawaiian and non-Hawaiian students followed the same general trend, increasing between school years 2002–03 and 2005–06, holding steady between 2006–07 and 2008–09, and then making substantial gains between 2008–09 and 2010–11.
- Since 2006–07, mathematics scores for Native Hawaiian middle school students increased by 15 percentile points, compared with 14 percentile points among non-Hawaiian students.
- The mathematics achievement gap between Native Hawaiian and non-Hawaiian middle school students decreased by 1 percentile point from 2006–07 to 2010–11 (compared with a decrease of 3 percentile points in reading achievement over the same period).

Source: Hawai‘i Department of Education SY 2002–03 to SY 2010–11.
Since 2006–07, the mean mathematics scores of Native Hawaiian high school students increased 18 percentile points, from the 37th percentile in 2006–07 to the 55th percentile in 2010–11. The scores of non-Hawaiian students increased by 14 percentile points over the same period.

The mathematics achievement gap between Native Hawaiian high school students and their non-Hawaiian peers decreased after the shift to TerraNova, from a high of 19 percentile points in 2006–07 to 15 percentile points in 2010–11.

**Timely Graduation**

Research shows that dropping out of high school often leads to “social and economic tragedy,” with an increased likelihood of unemployment, incarceration, and poverty. Further, the situation has grown worse over time as jobs that allow workers without an education to earn a living wage are increasingly rare (Orfield 2004, 1). These consequences reach beyond the individuals involved and their immediate families. Orfield notes that “When an entire racial or ethnic group experiences consistently high dropout rates, these problems can damage the community, its families, its social structure, and its institutions” (2004, 2).

The economic value of a high school education is starkly evident in employment and earnings data from the 2007–09 recession. Recent statistics from the Bureau of Labor Statistics indicate that adults without a high school degree are at great disadvantage in their prospects for employment and earnings. Among adults ages twenty-five and older, the unemployment rate of those with less than a high school diploma was nearly 50 percent higher than the rate for those with a high school diploma, more than double the rate of those with an associate’s degree, and almost triple the rate of those with a bachelor’s degree or higher (see Table 5.6). Those without a high school diploma who are employed, on average,
earn far less than their peers with more education. The median earnings for workers who did not complete high school was just over two-thirds of the earnings of their peers with a high school diploma or equivalent.

**TABLE 5.6 Unemployment and earnings by educational attainment**
[adults 25 years and older, 2011, United States]

<table>
<thead>
<tr>
<th>Education level</th>
<th>Unemployment rate</th>
<th>Median weekly earnings ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than high school</td>
<td>14.1</td>
<td>451</td>
</tr>
<tr>
<td>High school (including equivalent)</td>
<td>9.4</td>
<td>638</td>
</tr>
<tr>
<td>Some college, no degree</td>
<td>8.7</td>
<td>719</td>
</tr>
<tr>
<td>Associate’s degree</td>
<td>6.8</td>
<td>768</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>4.9</td>
<td>1,053</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>3.6</td>
<td>1,263</td>
</tr>
<tr>
<td>Professional degree</td>
<td>2.4</td>
<td>1,665</td>
</tr>
<tr>
<td>Doctoral degree</td>
<td>2.5</td>
<td>1,551</td>
</tr>
</tbody>
</table>


*Note: Earnings are for full-time wage and salary workers.*

Figure 5.38 depicts trends in high school completion within four years of first entering Grade 9 (often referred to as “timely graduation”). High school graduation is increasingly critical to one’s chances for success in postsecondary education and career.

**FIGURE 5.38 Trends in timely high school graduation**
[students who graduated within 4 years of first entry to Grade 9, as a percentage of all public high school students enrolled at Grade 9, by race/ethnicity, SY 2005–06 to SY 2009–10, Hawai‘i]

*Source: Hawai‘i Department of Education SY 2005–06 to SY 2009–10.*

*Note: Data for Chinese students are not reported here because their numbers are too limited to yield reliable results.*
• High school completion rates among Native Hawaiian students have been consistent across recent graduating classes, with slightly less than three in four completing high school within four years, compared with four in five public school students statewide.

• On the whole, Native Hawaiians in the public school system have had the lowest rates of timely graduation of all major ethnic groups in the state.

• Although Native Hawaiian graduation rates increased slightly between 2006 and 2008, the overall trend has remained relatively consistent at around 72 to 73 percent.

Risk Factors

A number of individual, family, school, and community factors can place children at risk for educational underachievement. Examples of individual factors include low birthweight, learning difficulties, low levels of cognitive engagement, low expectations, and prior history of low achievement. Family factors include low income, low levels of parent education, teenage parents, high levels of mobility, low expectations, and low levels of parental engagement or support for education. School and community factors include concentrated economic disadvantage, high levels of low achievement, low support for family and community engagement, and again, low expectations.

This section presents statistics on the prevalence of risk factors for Native Hawaiian and non-Hawaiian children in the public school system. The available data on risk factors are identified in Table 5.7.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Proxy/measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning difficulties</td>
<td>Special education placement</td>
</tr>
<tr>
<td>Low engagement/support</td>
<td>Attendance</td>
</tr>
<tr>
<td>Economic disadvantage</td>
<td>Community poverty level</td>
</tr>
</tbody>
</table>
Learning Difficulties and Special Education Placement

Special education services can be critical to the success of children with learning difficulties. However, when overapplied or misapplied, these services—and the labels attached to them—can limit opportunities to learn. Nationwide, there has been a trend toward overidentification of minority and indigenous children as requiring special education services. In Racial Inequality in Special Education, the authors note that:

Both the statistical and qualitative analyses in this book suggest that the racial, ethnic, and gender differences are due to many complex and interacting factors, including unconscious racial bias on the part of school authorities, large resource inequalities that run along lines of race and class, unjustifiable reliance on IQ and other evaluation tools, educators' inappropriate responses to the pressures of high stakes testing, and power differentials between minority parents and school officials. (Losen, Orfield, and Civil Rights Project [Harvard University] 2002, xviii)

In Hawai‘i, Native Hawaiians represented 27.9 percent of the kindergarten to Grade 12 public school population and 38.1 percent of all special education students in the 2011–12 school year (see Figure 5.40). The increased presence of risk factors associated with low economic and social capital likely contributes in part to the increased rate of identification. However, this disproportionality in special education enrollment raises concerns. An analysis of the Hawai‘i DOE's special education data revealed that the likelihood of being identified as requiring special education services is 86 percent higher for Native Hawaiians than for non-Hawaiians when using only Hawaiian ancestry to predict classification. After statistically controlling for economic disadvantage and sex, the likelihood of being identified for special education is 69 percent higher for Native Hawaiians than for non-Hawaiians (Tibbetts 2013).

The percentage of Native Hawaiians and non-Hawaiians enrolled in special education programs in recent years is shown in Figure 5.39.
Special education enrollment among Native Hawaiian public school students was 15.4 percent during school year 2011–12, compared with 9.7 percent among non-Hawaiian students.

The proportion of Native Hawaiian students participating in special education programs decreased by 1.2 percentage points between 2002–03 and 2011–12.

A gradual but steady decline in Native Hawaiian enrollment in special education occurred between the 2002–03 and 2007–08 school years (an average of 0.6 percentage points per year, compared with only 0.3 per year for non-Hawaiians). But this was followed by a subsequent increase of 1.6 percentage points.

Figure 5.40 shows the gap between Native Hawaiian students as a percentage of all students and as a percentage of special education students.
Native Hawaiians were overrepresented in special education programs by an average of 11.3 percentage points from 2002–03 to 2011–12.

**School Engagement**

School engagement is typically described as having three dimensions: cognitive, behavioral, and affective (Wang and Holcombe 2010). The data available for this report include one indicator of the behavioral dimension: attendance. Regular attendance is critical to educational success, as each missed school day is a missed opportunity to learn (e.g., Gottfried 2010, Moyer 2013). Figure 5.41 suggests that absences are more common in schools with high levels of Native Hawaiian enrollment.

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11. Earlier versions of the Native Hawaiian Educational Assessment, *Ka Huaka‘i* 2005, and the 2009 update to *Ka Huaka‘i* included statistics on the proportion of students with excessive absences. However, in more recent years this statistic has become less reliable—probably as a result of changing definitions—and is therefore intentionally omitted from this report.
• The average daily attendance rate among predominantly Native Hawaiian public schools was 91.3 percent. This means that on an average school day, almost one out of every ten students (8.7 percent) was absent from school. This average daily attendance rate represents an increase of 1.2 percentage points since the 2000–01 school year (not shown).

• Schools with less than 25 percent Native Hawaiian enrollment had a higher average daily attendance rate (94.6 percent), compared with schools with higher Native Hawaiian enrollment.

**Low Socioeconomic Status**

Socioeconomic status (SES) is often measured as a combination of education, income, and occupation. Low socioeconomic status is educationally significant because it often represents limited financial, social, and cultural capital for children and their families and is highly correlated with lower levels of achievement. At the school and community levels, high concentrations of individuals with low SES often signify limited access to resources, which can affect the quality of schooling, the availability of educational opportunities, and access to peer and adult role models who have been successful in school and career—all of which affect social mobility and equity (Sirin 2005).

Changes in federal policies have made it difficult to obtain student-level data regarding participation in the subsidized (free/reduced price) meals program—an indicator researchers have often used as a proxy for SES in public school students. Given this limitation, we focus instead on community-level poverty, which may have as much influence on educational outcomes as the family SES of an individual student (Sirin 2005).

Figure 5.42 shows the distribution of Native Hawaiian and non-Hawaiian public school students across communities with varying levels of poverty.
• Native Hawaiian public school students were twice as likely as were non-Hawaiians to attend school in communities with the highest levels of poverty (26.7 percent versus 13.1 percent, respectively).

• Less than half of all Native Hawaiian public school students (47.2 percent) attend school in communities with the lowest levels of poverty, compared with about three in five non-Hawaiian students (61.5 percent).

School-Level Resources and Outcomes

One of the key issues in educational reform over the last quarter century has been the equality of access to high-quality education. Quality can be measured on many dimensions. Here we focus on proxies for school quality, such as the distribution of high-caliber human resources and high-quality infrastructure (e.g., teacher certification, teacher experience, principal turnover, and facility ratings), as well as results from the annual Hawai‘i DOE’s School Quality Survey.

Teacher Certification

Among the factors controlled by the educational system, teacher quality arguably has the most significant impact on student achievement. A review of research on major contributors to academic outcomes revealed that, after the characteristics of students themselves, teachers had the largest single influence on achievement (Hattie 2003).

While teacher quality, certification, and experience are not the same, they are related constructs. Teachers who are certified and more experienced tend to have greater impacts on student learning than do novice or uncertified teachers (Kane, Rockoff, and Staiger 2006). Research has shown that measures of teacher preparation and certification are strong correlates of student achievement in reading and mathematics (Darling-Hammond 2000).
Teachers with emergency or provisional credentials are sometimes utilized instead of certified teachers. The proportion of teachers with emergency or provisional credentials is shown in Figure 5.43 and Figure 5.44. Schools are sorted into three groups based on the proportion of Native Hawaiians in the total student enrollment: less than 25 percent, 25 to 50 percent, and more than 50 percent.

**FIGURE 5.43** Teachers with emergency or provisional credentials by level of Native Hawaiian enrollment

[as a percentage of all public school teachers, SY 2011–12, Hawai’i]

- Teachers at predominantly Native Hawaiian public schools were almost twice as likely to have provisional or emergency credentials as were teachers at schools where Native Hawaiians constituted 25 to 50 percent of the student body (5.6 percent versus 2.9 percent, respectively).
Public school teachers with provisional or emergency credentials were more prevalent in Kona–Kohala–Hāmākua and Wai’anae than in other areas.¹²

Teachers in Kona O’ahu and Hilo–Puna–Ka’ū were most likely to be fully licensed, with only 1.6 percent and 1.4 percent holding provisional or emergency credentials, respectively.

Teachers with graduate degrees in teaching and/or their subject area are another part of overall school quality. While research findings are mixed on the impact that teachers with graduate degrees have on test scores, some literature suggests that secondary school students may benefit from teachers with graduate degrees in the subject matter taught (Clotfelter, Ladd, and Vigdor 2007, Darling-Hammond et al. 2005). In addition, some educational researchers theorize that the beneficial effects of teachers with graduate degrees or advanced certification may be most evident in the dimensions of student growth and engagement that are not measured by standardized achievement tests (Hattie 2009).

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¹² Lāna‘i and Ni‘ihau were excluded from school-level regional analyses because each island has a single school.
The next two figures depict the percentage of teachers with graduate degrees in relation to school characteristics such as the proportion of Native Hawaiian enrollment (Figure 5.45) and geography (Figure 5.46).

**FIGURE 5.45** Teachers with graduate degrees by level of Native Hawaiian enrollment [as a percentage of all public school teachers, SY 2011–12, Hawai‘i]

- In public schools with less than 50 percent Native Hawaiian enrollment, more than one-third of the teachers (36.3 percent) had earned a graduate degree.
- In predominantly Native Hawaiian schools, less than one in three teachers (32.4 percent) had obtained a master’s or doctoral degree.
- Since school year 2001–02 (not shown), the percentage of teachers with graduate degrees has increased in schools across all levels of Native Hawaiian enrollment.

Source: Hawai‘i Department of Education SY 2011–12.
Teachers with graduate degrees by region
[as a percentage of all public school teachers, SY 2011–12, Hawai‘i]

- Public school teachers with graduate degrees were represented fairly consistently across regions.
- The percentage of teachers with graduate degrees was highest in Kona O‘ahu (38.6 percent).
- Areas where the percentage of teachers with graduate degrees was lowest include Wai‘anae (31.3 percent), Hilo–Puna–Ka‘u (33.0 percent), and Kaua‘i (33.7 percent).

**Teacher Experience and Retention**

Research demonstrates that there is a steep learning curve for new teachers, with teacher efficacy improving dramatically in the first three to four years of teaching (Center for Education Policy Research at Harvard University 2010). Therefore, years of teaching experience is another key proxy for school quality and educational equity.

Figure 5.47 shows teachers’ average years of experience in the public school system. Slight disparities are apparent in the levels of experience among teaching staff, with the typical teacher in predominantly Native Hawaiian schools having about one less year of experience than his or her colleagues in schools with lower levels of Native Hawaiian enrollment. Note, there have been gains in teachers’ average years of experience in charter schools. This is largely a result of the fact that the majority of charter schools first opened in school years 1999–00 or 2000–01.
The average years of experience of public school teachers in predominantly Native Hawaiian schools was 11.2 years.

The difference in teacher experience between predominantly Native Hawaiian schools and those where less than 25 percent of the students are Hawaiian declined from 3.1 years in 2001–02 (not shown) to 1.0 years 2011–12.

Differences in average years of teacher experience are apparent across regions.

Source: Hawai‘i Department of Education SY 2011–12.

Note: Data for Lāna‘i and Ni‘ihau are either unavailable or too limited to yield reliable results.
• Public school teachers in Kona O‘ahu had the highest average years of experience (13.0 years) compared with their peers in other areas.

• Teachers in Wai‘anae had, on average, 2.5 fewer years of experience than did the average teacher statewide.

In a similar vein, research has shown that teacher turnover is related to overall achievement levels at schools. The effects of faculty turnover are not restricted to students who are assigned to new teachers; high rates of turnover can have a small but significant effect on test scores schoolwide (Ronfeldt, Loeb, and Wyckoff 2013).

**FIGURE 5.49** Teacher retention by level of Native Hawaiian enrollment
[teachers with at least 5 years of service at current school, as a percentage of all public school teachers, SY 2011–12, Hawai‘i]

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Schools with less than 25% Native Hawaiian enrollment</th>
<th>Schools with 25% to 50% Native Hawaiian enrollment</th>
<th>Schools with greater than 50% Native Hawaiian enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>61.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: Hawai‘i Department of Education SY 2011–12.*

• Three out of every five teachers in predominantly Native Hawaiian public schools (60.3 percent) had at least five years of service at their current school.

• In schools where a majority of students are not Native Hawaiian, the percentage of teachers with five or more years at their current school was only slightly higher than that of predominantly Native Hawaiian schools (63.3 percent for schools with 25 to 50 percent Native Hawaiian enrollment and 61.4 percent for schools with less than 25 percent Native Hawaiian enrollment).

• Since school year 2001–02 (not shown), the percentage of teachers with at least five years of service at their current school remained constant for predominantly Native Hawaiian schools and decreased for schools with less than 50 percent Native Hawaiian enrollment.

In contrast to the relative equity in teachers’ years of service across school types, teacher turnover rates by region are more pronounced, as shown in Figure 5.50.
The percentage of teachers with five or more years of service at their current school was the highest in Ko‘olauloa–Ko‘olaupoko (65.8 percent), compared with the statewide average of 61.8 percent. Not only did Wai‘anae have the lowest percentage of teachers with five or more years at their current schools (56.6 percent), but the percentage of Wai‘anae teachers with five or more years of service has decreased by 5.9 percentage points since school year 2001–02 (not shown).

**Principal Turnover**

The role of the principal in school effectiveness is of growing interest in the school reform literature. Miller (2009) found that schools experiencing a transition in principals had low test scores compared with the historical and future performance of the school. (Scores typically return to pretransition levels within four years of the transition.) Thus, assuming the principal is an effective educational leader, frequent changes in principals would likely lead to lower performance. Principal turnover at Hawai‘i public schools is presented in Figure 5.51 and Figure 5.52.
In predominantly Native Hawaiian schools, principal turnover is slightly lower than in other schools, with an average of 1.2 principals during a five-year span.

Principal turnover in predominantly Native Hawaiian schools has improved since 2002 (not shown), when there was an average of 2.0 principals during a five-year span.

As shown in Figure 5.52, principal turnover varies widely by region.
- Principal turnover was lowest on Kaua’i, with an average of 1.1 principals during a five-year span.
- The highest rate of principal turnover was on Moloka’i, where schools averaged 2.0 principals over the previous five years.

**School Quality Survey**

Data from the Hawai’i DOE’s School Quality Survey (SQS) offer another perspective on education quality. The SQS solicits direct feedback from teachers, parents, and students.\(^{13}\) Data for Ni’ihau and Lāna’i are not included in this section as the number of surveys or return rate is too low to ensure the data are valid representations of the schools on those islands. More information about the SQS, including the definition of the scales, is available on the Hawai’i DOE’s website (Hawai’i Department of Education 2012).

Figure 5.53 shows the percentages of teachers, parents, and students who responded positively when asked about “support for students” at their school. The SQS defines this support measure as a schoolwide focus on high expectations for all students and the provision of an array of support services for students in and outside of school.

**FIGURE 5.53** Positive ratings of “school support for students” by level of Native Hawaiian enrollment

[as a percentage of all survey responses, by stakeholder type, SY 2011–12, Hawai’i]

<table>
<thead>
<tr>
<th>Enrollment Level</th>
<th>Students</th>
<th>Parents</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 25% Native Hawaiian</td>
<td>79.5</td>
<td>86.4</td>
<td>91.5</td>
</tr>
<tr>
<td>25% to 50% Native Hawaiian</td>
<td>78.6</td>
<td>83.9</td>
<td>90.4</td>
</tr>
<tr>
<td>Greater than 50% Native Hawaiian</td>
<td>81.2</td>
<td>85.5</td>
<td>88.7</td>
</tr>
</tbody>
</table>

Source: Hawai’i Department of Education School Quality Survey, SY 2011–12.

\(^{13}\) The SQS was revised for use in the SY 2011–12, and the results are not directly comparable to those from previous years.
- Teacher ratings of school support were the least positive in predominantly Native Hawaiian schools (88.7 percent), compared with slightly higher ratings among schools with a greater proportion of non-Hawaiian students (90.4 percent and 91.5 percent).

- Conversely, students’ positive ratings of school support were the highest in predominantly Native Hawaiian schools (81.2 percent), compared with slightly lower ratings among schools with lower proportions of Native Hawaiian students (78.6 percent and 79.5 percent).

- Parents’ positive ratings of school support were highest in schools with the lowest levels of Native Hawaiian enrollment (86.4 percent) but only slightly lower in predominantly Native Hawaiian schools (85.5 percent).

Average ratings for student support by region are shown in Figure 5.54.

- Overall, teachers’ ratings for school support were highly positive. Between 86 and 93 percent of teachers agreed that their school promotes high expectations for all students and provides the prescribed array of support services.

- Teachers’ positive ratings of school support were highest in ‘Ewa–Waialua (93.1 percent) and Moloka‘i (92.6 percent).

- ‘Ewa–Waialua and Moloka‘i also had relatively high ratings of school support among parents, with 86.0 percent and 87.2 percent of parents providing positive responses, respectively. Only Kona O‘ahu had a higher positive rating among parents (88.0 percent).

- Students’ positive ratings of school support were lowest on Maui (75.8 percent), compared with 79.4 percent statewide.
Figure 5.55 shows the percentages of teachers, parents, and students who responded positively when asked about “teamwork” at their school. The SQS defines teamwork as a schoolwide focus on student achievement and outcomes. It also includes perceptions about the adequacy of resources available to achieve intended learning outcomes for students.

**FIGURE 5.55** Positive ratings of “teamwork in schools” by level of Native Hawaiian enrollment
[as a percentage of all survey responses, by stakeholder type, SY 2011–12, Hawai‘i]

- Teachers’ positive ratings of teamwork were comparable across schools (84.9 percent and higher), regardless of Native Hawaiian enrollment levels.
- Parents’ positive ratings of teamwork ranged from 77.4 percent to 81.2 percent.
- However, student responses differ substantially by level of Native Hawaiian enrollment. About nine out of every ten students (86.2 percent) at predominantly Native Hawaiian schools gave positive ratings for teamwork at their school, compared with eight of ten students (80.9 percent) at schools with the lowest concentration of Native Hawaiians.

A look at SQS teamwork ratings by region shows more differentiation.
The highest proportions of positive responses were found on Moloka‘i, with 89.8 percent of students and 93.0 percent of teachers giving positive ratings for teamwork; the positive ratings among Moloka‘i parents (77.3 percent) were similar to those observed in other areas.

Among parents, the least positive ratings of school teamwork came from Ko‘olauloa–Ko‘olaupoko (75.0 percent) and Kona–Kohala–Hāmākua (75.3 percent).

SQS respondents also were asked to rate the professionalism and capacity of their schools. Teachers were asked about support for their professional development and the extent to which these activities are focused on improving student outcomes. High school students were asked how knowledgeable their teachers are in the subjects they teach. These questions were not asked of parents nor of elementary and middle school students.
School professionalism and capacity were given high ratings by approximately nine out of every ten public school teachers (between 91.5 percent and 92.1 percent) across schools with varying levels of Native Hawaiian enrollment.

Students in predominantly Native Hawaiian schools were slightly more likely to report a positive rating of their school’s professionalism and capacity (86.7 percent) than were students in schools with lower Native Hawaiian enrollment (83.1 percent and 84.8 percent).

An analysis of professionalism and capacity ratings by region shows little variation.
Professionalism and capacity were given positive ratings by approximately nine out of every ten public school teachers. The highest ratings (95.0 percent) came from teachers in Moloka‘i’s schools.

Student responses for the professionalism and capacity of schools were more variable, with positive ratings ranging from 80.8 percent on Kaua‘i to a high of 89.5 percent in the Wai‘anae area.

Another important dimension of the school environment is safety. Figure 5.59 shows the proportion of respondents who gave positive ratings when asked about student behavior, feeling safe at school, and whether the environment is conducive to learning.
• Teachers’ positive ratings of school safety in predominantly Native Hawaiian schools were slightly lower than those at schools with a greater proportion of non-Native Hawaiian students (89.0 percent versus 90.7 percent and 91.7 percent).

• Parents’ ratings of school safety were the least positive (84.1 percent) at schools with 25 to 50 percent Native Hawaiian enrollment.

• Students’ positive ratings of school safety were the highest (81.2 percent) at predominantly Native Hawaiian schools.

Overall, perceptions of school safety were consistent across the islands. Generally, a high proportion of teachers, parents, and students gave their schools positive safety ratings regardless of region.

Source: Hawai‘i Department of Education School Quality Survey, SY 2011–12.
Teachers’ positive ratings of school safety were highest in the ‘Ewa–Wailua, Kaua’i, and Moloka’i areas.

‘Ewa–Waialua and Moloka’i also had relatively high ratings of school safety among parents, with 86.2 percent and 86.7 percent of parents providing positive responses, respectively. Only Kona O’ahu earned more positive parental ratings on safety (88.1 percent).

Students’ positive ratings of school safety were somewhat lower than those of their teachers and parents, with roughly two out of ten students responding negatively when asked about school safety. (This includes 6 to 7 percent who responded “don’t know.”)

Perceptions of teamwork, professionalism, safety, and other dimensions surveyed but not included in this report contribute to overall satisfaction with the public schools. When reporting on overall satisfaction with their schools, respondents were asked to think about the extent to which the school is providing students with a quality education; instruction is challenging, interesting, and relevant to the world outside the classroom; and students are learning “a lot” and enjoy coming to school.
Teachers’ satisfaction ratings were the least positive in predominantly Native Hawaiian schools (85.3 percent), compared with slightly higher ratings among schools with a greater proportion of non-Hawaiian students (88.1 percent and 88.7 percent).

Students in predominantly Native Hawaiian schools were more likely to report being satisfied with their schools (84.1 percent compared to 82.0 and 79.8 percent of students in schools with lower proportions of Native Hawaiians).

As with the other SQS dimensions, overall satisfaction ratings are relatively consistent across the islands. Generally, a high proportion of teachers, parents, and students gave positive ratings for their schools, regardless of region.
Teachers’ satisfaction ratings were highest on Moloka’i and in ‘Ewa–Waialua.

Parents’ reported satisfaction levels were highest in Kona O’ahu, although the range in satisfaction ratings is relatively small (a high of 89.5 percent in Honolulu and a low of 82.1 percent for the Kona–Kohala–Hāmākua area).

Students’ satisfaction ratings were somewhat lower than those of their teachers and parents, with roughly two out of ten students reporting negative ratings across the islands. (This includes 6 to 7 percent who responded “don’t know.”)
Facilities

The quality of school facilities can affect students’ perceptions of the quality and value of their education. School facilities are also a civil rights issue. Several federal court cases have resulted in mandates to ensure that minority and economically disadvantaged students are not subjected to facilities of lower quality than those of their nonminority or wealthier peers (Johnson 1997).

The Hawai‘i public school system conducts regular reviews of school facilities. The percentage of schools with “very good” infrastructure is shown below. Figure 5.63 presents this data by the proportion of students in the schools who are of Hawaiian ancestry. Figure 5.64 presents this data by region.

**FIGURE 5.63** Trends in schools with “very good” facilities by level of Native Hawaiian enrollment  
[as a percentage of all public schools, ratings per annual assessment of public school facilities, SY 2003–04 to SY 2009–10, Hawai‘i]

- “Very good” infrastructure ratings for predominantly Native Hawaiian schools increased from 37.9 percent in school year 2003–04 to 51.2 percent in 2009–10.
- However, predominantly Native Hawaiian schools have generally lagged behind other schools in achieving “very good” infrastructure ratings (except in the 2006–07 and 2009–10 school years).
- Among schools with Native Hawaiian enrollment between 25 and 50 percent, the proportion with “very good” infrastructure ratings decreased by 5.1 percentage points between school year 2003–04 and 2009–10.
- Schools with Native Hawaiian enrollment of less than 25 percent or more than 50 percent have followed an upward trend in achieving “very good” infrastructure ratings since school year 2005–06.

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14 Although the school facilities ratings reported in Figure 5.63 and Figure 5.64 were discontinued in school year 2010–11, Hawai‘i DOE schools are still required to do an annual assessment of their facilities in the following areas: grounds, building exterior, building interior, equipment/furnishings, and health/safety and sanitation (Hawaii 2012). Findings from annual inspections are no longer available at the state level for reporting.
• Kona O‘ahu and Moloka‘i had the highest percentage of schools with “very good” infrastructure ratings (60.3 percent and 60.0 percent, respectively).

• Positive facilities ratings among O‘ahu schools exceeded the statewide average (51.8 percent) in all areas except Wai‘anae (44.4 percent).

• Across the islands, a “very good” infrastructure rating was least likely at public schools on Maui (29.2 percent).
Adequate Yearly Progress

When public schools meet all their annual No Child Left Behind (NCLB) benchmarks, they are deemed to have made “adequate yearly progress (AYP)” (Hawai‘i Department of Education 2013a,b). Patterns and trends in a school’s AYP outcomes translate into the school’s NCLB status, which ranges from “in good standing” to “restructuring.” Although problems with the leap from AYP to inferences about school quality are legion (Popham 2004), these statistics can provide a gross indicator of student achievement and other outcomes such as promotion to the next grade and timely graduation from high school. They can also provide a limited but helpful starting place for thinking about support for learners.

Figure 5.65 presents NCLB status in Hawai‘i public schools by the proportion of students who are Native Hawaiian. Schools with high concentrations of Native Hawaiian students struggle to meet NCLB benchmarks more than other public schools.

- Schools that serve a smaller proportion of Native Hawaiian students were most likely to be in good standing (55.5 percent), while predominantly Native Hawaiian schools were least likely to be in good standing (41.0 percent).
• The likelihood of a school to be restructuring or planning for restructuring was approximately the same for schools with very small and very large Native Hawaiian populations (29.9 percent and 27.9 percent, respectively). Schools with 25 to 50 percent Native Hawaiian enrollment were most likely to be restructuring or planning for restructuring (40.9 percent, compared with the state average of 32.9 percent).

• Predominantly Native Hawaiian schools were more than twice as likely as other schools to be under school improvement or corrective action status (31.1 percent versus 14.6 percent and 14.8 percent). This is a concern because schools with either of these status classifications may be restructuring or planning for restructuring in the next one to four years.

• Two in five predominantly Native Hawaiian schools (41.0 percent) were in good standing—a decrease from one in two (55.9 percent) in school year 2002–03 (not shown).

Another way to look at the impact of AYP and NCLB on Native Hawaiian students is to compare the distribution of Native Hawaiian and non-Hawaiian students across schools with varying NCLB classifications. This view of the data is shown in Figure 5.66.
Attended at a school in good standing was less likely for Native Hawaiian students (31.1 percent) than it was for their non-Hawaiian peers (35.2 percent).

- Native Hawaiian students were more likely than were non-Hawaiians to attend a school facing corrective action or restructuring (68.9 percent versus 64.9 percent, respectively).

An additional student-level perspective looks at the concentration of Native Hawaiian students in schools grouped by NCLB status, as shown in Figure 5.67.
Although Native Hawaiian students accounted for 27.9 percent of Hawai‘i’s public school enrollment, they constituted 25.5 percent of enrollment in schools in good standing and 32.9 percent of enrollment in schools undergoing school improvement or corrective action.

Looking across all schools, the percentage of Native Hawaiians in schools undergoing or planning for restructuring (28.0 percent) was proportionate to Native Hawaiian student enrollment.

Source: Hawai‘i Department of Education SY 2011–12.
There is substantial evidence that the lower level of achievement seen among minority and indigenous students may be attributable, in part, to differences between home and school cultures. Kana‘iapuni, Ledward, and Jenson (2010) synthesized a substantial body of literature—on cultural difference (Erickson 1993), cultural compatibility (Vogt, Jordan, and Tharp 1987), cultural congruence (Mohatt and Erickson 1981), oppositional theory (Ogbu 1987), cognitive theory (Demmert and Towner 2003), and cultural-historical-activity (Roth and Lee 2007)—to explain why indigenous and minority students may feel disconnected from a traditional public education system built around the predominant Western worldview and how that alienation may manifest in lower achievement levels and disengagement from the school environment. They argue that the academic outcomes of Native Hawaiians and other indigenous students may be enhanced by integration of learners’ home culture and community within the educational process, and they highlight a substantial body of literature evidencing the benefits of culturally appropriate and culturally relevant instruction.

Kawakami and Aton (2001) found that the most effective teachers of Native Hawaiian students incorporate experiential, authentic activities into their instruction. Yamauchi (2003) concluded that Native Hawaiian students are more engaged in traditional public schools that integrate hands-on learning grounded in significant places within the local community. The work of Lipka, Sharp, Adams, and Sharp (2007) lays the foundations for a claim of a causal link between culture-based education and academic performance. Kana‘iapuni, Ledward, and Jensen (2010) further detailed the underlying, causal mechanisms, finding that culture-based education increases social-emotional well-being and that social-emotional well-being, in turn, positively impacts students’ mathematics and reading scores.

The Hawaiian culture-based educational movement seeks to mobilize this growing body of knowledge to improve the educational outcomes and well-being of individuals, families, and communities. Hawaiian-focused charter schools have been innovators in the development of experiential, place-based learning, and have been leaders in focusing on cultural identity as a foundation for social-emotional well-being.

This section briefly reports information on racial/ethnic composition of enrollment in Hawaiian-focused charter schools and on measures of proficiency among charter school students.
• Native Hawaiians accounted for more than three out of four students in Hawaiian-focused charter schools (75.9 percent)—almost three times the concentration of Native Hawaiians in noncharter schools.

• White students were the second-largest ethnic group in Hawaiian-focused charters (7.1 percent) but accounted for almost half of all students in other charters (44.5 percent).

• Filipino students made up the second-largest ethnic group in the public school system (22.9 percent) but constituted just 4.4 percent of enrollment in Hawaiian-focused charter schools and 7.7 percent of enrollment in other charters.

The Hawaiian-focused charter school typically serves a distinct and relatively disadvantaged population of students, making it a challenge to accurately and fairly evaluate outcomes.\textsuperscript{15} Students at Hawaiian-focused charter schools often include keiki who have struggled in the traditional public schools and are several grades behind their peers. Furthermore, as a group, Hawaiian-focused charter schools have been faced with higher-than-average proportions of students eligible for meal subsidies.\textsuperscript{16}

The proficiency rates reported below highlight the achievement gaps between students enrolled in Hawaiian-focused charter schools and those in other types of public schools. However, these data fail to adequately address questions of student growth and school impact in a way that reflects differences in the students’ backgrounds. Given these factors, the following figures should be viewed as snapshots of divergent student populations, rather than indicators of school quality.

\textsuperscript{15} For example, due to changes in federal laws noted earlier in this chapter, we no longer have access to individual student data on eligibility for meal subsidies. And, because charter schools do not draw students from discrete geographic boundaries, we are unable to estimate community levels of poverty.

\textsuperscript{16} This is based on school profiles as part of annual reports submitted to Kamehameha Schools.
Assessment data in this section are organized by a cross-sectional look at proficiency by grade followed by a longitudinal look at growth from Grade 3 to Grade 8.\(^\text{17}\) Within the cross-sectional and longitudinal sets of figures, the data are presented from two perspectives. The first perspective (in Figure 5.69 and Figure 5.70) reports data for all students by school type (Hawaiian-focused charter schools, all other charter schools, and noncharter public schools). The second perspective specifically focuses on Native Hawaiian students by type of school.

**FIGURE 5.69** Reading proficiency among public school students by charter school type

[HSA reading scores at or above proficient level, as a percentage of all public school students tested, for selected grades, SY 2006–07 to SY 2010–11, Hawai‘i]

- HSA reading scores in Hawaiian-focused charters were consistently lower than those of other charter schools by an average of 26.0 percentage points.
- The reading achievement gap between students in Hawaiian-focused charter schools and those in noncharter public schools was greatest at Grade 3 (19.7 percentage points).
- The gap was smallest at the higher grades, with a difference in reading proficiency of 9.8 percentage points at Grade 8 and 8.6 percentage points at Grade 10.\(^\text{18}\)

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\(^{17}\) Currently, there are not enough data on comparable versions of the HSA or on TerraNova to report longitudinal results for a cohort through Grade 10.

\(^{18}\) The impact of Hawaiian language immersion students was not a factor in the Grade 3 data, as students in this grade would have been assessed with a different test. Immersion students are not tested in English until Grade 5.
HSA mathematics scores in Hawaiian-focused charter schools lagged behind the rates of other charter schools by roughly 20 to 24 percentage points.

The mathematics achievement gap between students in Hawaiian-focused charter schools and those in noncharter public schools was smallest at Grade 3 (19.6 percentage points) and greatest at Grade 10 (24.4 percentage points).

The previous figures reported proficiency for all students by type of school. The next two figures focus on the proficiency of Native Hawaiian students only.
Even among just Native Hawaiian students, the contrasting populations served by different types of charter schools are reflected in disparate reading scores, with proficiency rates among Hawaiian-focused charter schools consistently lagging behind the rates of other charter schools by more than 12 percentage points.

Native Hawaiian students in Hawaiian-focused charter schools were less likely to score at the proficient level in reading than were their Native Hawaiian peers in other types of public schools, except at Grade 10.

The gap between the reading proficiency rates of Native Hawaiians in Hawaiian-focused charter schools and noncharter public schools is greatest at Grade 3 (11.8 percentage points) but is smaller at higher grades, with the scores of the two groups essentially the same at Grade 10.
• In mathematics, Native Hawaiians in traditional public schools have higher proficiency rates than their counterparts in either Hawaiian-focused charter schools or other charter schools, except in Grade 10.

• The mathematics proficiency gap between Native Hawaiians in Hawaiian-focused charter schools and noncharter schools was greatest in Grade 8 (14.7 percentage points).

The proficiency rates illustrated in Figure 5.71 and Figure 5.72 underscore the significant challenges facing Hawaiian-focused charter schools. To better understand how Hawaiian-focused charter schools are responding to such challenges and impacting student outcomes, we look to longitudinal analyses that track gains in the test scores of a single cohort of students followed across five years.

Interpretation of the following figures should be tempered with caveats due to the small sample sizes in Hawaiian-focused charter schools and the occurrence of transfers between different school types. However, the results of this longitudinal perspective remain compelling, suggesting that students in Hawaiian-focused charter schools achieve gains over time that are comparable to or greater than those of their peers in other types of public schools.

In these analyses, students are grouped by the type of school they were enrolled in at Grade 8, regardless of the type of school they attended in Grades 4 and 6. Implicit here is the fact that some students move in and out of different types of schools over the course of their formal education.19

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19. However, to mitigate the impact of transfers, students who switched from one school type to another between Grade 7 and Grade 8 were excluded from this analysis. In other words, to be included in the Hawaiian-focused charter school grouping in this analysis, a student must have been enrolled in a Hawaiian-focused charter school for at least the past year.
Despite having the lowest HSA reading proficiency rates across all three grades shown, students in Hawaiian-focused charter schools made the greatest gains over time. Over five years, the proportion of students who were proficient in reading increased by 25.4 percentage points, from 36.9 percent in Grade 4 to 62.3 percent in Grade 8.

The reading achievement gap between students in Hawaiian-focused charter schools and those in other types of public schools decreased by half.

The gap between Hawaiian-focused charters and other charters decreased from 32.3 percentage points in Grade 4 to 15.5 points in Grade 8. Similarly, the reading achievement gap between Hawaiian-focused charters and noncharters decreased from 14.4 percentage points in Grade 4 to 6.8 points in Grade 8.

Similar progress is apparent in mathematics proficiency rates at Hawaiian-focused charter schools.
The HSA mathematics scores of Hawaiian-focused charter schools were the lowest across all three grades shown; however, Hawaiian-focused charters achieved the greatest gains over four years, with mathematics proficiency increasing by 15.3 percentage points, from 22.9 percent in Grade 4 to 38.2 percent in Grade 8.

Over the same period, proficiency rates decreased by 2.7 percentage points at other charter schools and increased by 11.5 percentage points at noncharter schools.

Over four years, the mathematics achievement gap between students in Hawaiian-focused charters and those in noncharter public schools decreased from 22.7 percentage points in Grade 4 to 18.9 points in Grade 8.

The gap between Hawaiian-focused charters and other charters decreased from 32.3 percentage points in Grade 4 to 14.3 points in Grade 8.

The previous figures presented longitudinal trends for all students by charter school type. The following figures present longitudinal trends for Native Hawaiian students alone. Because the number of Hawaiian students in other charters is small, we have excluded those statistics from these figures.
Trends in reading test scores for Native Hawaiian students in Hawaiian-focused charter schools and in noncharter public schools were very similar, although a smaller proportion of students in the Hawaiian-focused charter schools were proficient in Grade 3 (32.4 percent compared with 37.3 percent, respectively).

The gap in reading proficiency rates between Native Hawaiian students in Hawaiian-focused charters and Native Hawaiian students in other public schools had been eliminated at Grade 8. This is unlike the gap between all students in Hawaiian-focused charter schools and noncharter public school students, which narrowed but was still evident in Grade 8 (see Figure 5.73).
• As with reading, the overall trend in mathematics test scores for Native Hawaiian students in Hawaiian-focused charter schools and in noncharter public schools was similar.

• Across school types, Native Hawaiian students showed substantial increases in the percent proficient in mathematics from Grade 4 to Grade 8. The percent proficient increased from 18.6 in Grade 4 to 32.9 in Grade 8 at Hawaiian-focused charters and from 31.5 to 44.1 at noncharter schools.

• Unlike reading, the increase in mathematics proficiency was comparable across school types with the result that the gap in proficiency by school type changed little between Grade 4 and Grade 8 (a gap of 12.9 and 11.2 percentage points, respectively).
OPPORTUNITY YOUTH

Opportunity youth, sometimes referred to as idle youth or disconnected youth and typically characterized by being neither employed nor in school, represent a serious challenge to the well-being of themselves, their families, and their communities. Conversely, successful strategies to connect opportunity youth to education and work may improve well-being at all these levels.

An information brief prepared for the Annie E. Casey Foundation reported that opportunity youth made up 8 percent of the population of sixteen- to nineteen-year-olds in 2007. However, the statistics were much higher for indigenous and minority youth, with 15 percent of American Indian youth, 13 percent of African American youth, and 12 percent of Hispanic youth neither in school nor employed (Shore and Shore 2009).

In 2009, the American Community Survey estimated that 9 percent of youth ages sixteen to twenty-four were opportunity youth. However, based on a comparison of multiple sources, the authors of an analysis of the economic value of opportunity youth believed this was too low and reported that “for the 16–24 age group, we estimate that at least 6.7 million (17 percent) are currently ‘opportunity youth’” (Belfield, Levin, and Rosen 2012, 1 and 7).

Belfield, Levin, and Rosen describe the “social burden” and the “tax payer burden” related to opportunity youth. The social burden comprises lost earnings, additional health expenditures, and all crime-related costs. The authors estimate the lifetime social burden to be in excess of an average of $700,000 per opportunity youth. The tax burden comprises lost tax revenues, additional healthcare paid by tax payers, expenditures for criminal justice and corrections systems, and welfare and social service payments. They estimate this cost to be in excess of $230,000 over the lifetime of each opportunity youth. These figures do not include costs to families for providing for their family members, resources provided by nongovernmental agencies, or costs derived from intergenerational transfers of economic and health-related disadvantage.

The weight of the social and tax burdens of opportunity youth and the numbers of youth who are disengaged suggest that investments in helping these youth engage successfully in school and work may yield substantial returns to individual and community well-being. Belfield, Levin, and Rosen conclude:

In these analyses we do not make any commitments about how the potential of opportunity youth can be realized. There are many options—improved schools, safer neighborhoods, enhanced family and community supports, or tax incentives for employers. We also do not predict how many opportunity youth would respond to these commitments or what they would cost to implement. Indeed, there are many challenges to implementing effective programs for those who are most disadvantaged, poorest educated or least connected to the workplace (Bloom, Thompson, and Ivry 2010). Nevertheless, the personal, economic and social cost of failure is such that many such commitments might be attempted. (2012, 26)

As shown in Figure 5.77, data from the 2006–10 ACS suggest that a substantial number of Hawai‘i youth are neither employed nor in school and that Native Hawaiian youth are overrepresented in this group.

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20. This estimate includes 3.3 million underengaged youth who are intermittently employed or in school between the ages of sixteen and twenty-four.
About one in five Native Hawaiians between the ages of sixteen and twenty-four (20.1 percent) was neither in school nor in the workforce, compared with roughly one in seven youth (14.0 percent) statewide.

Of the major ethnic groups, Native Hawaiians have the most to gain from programs to help disengaged and underengaged youth develop their human capital through productive educational and employment opportunities.
In 2005, well before gaps in employment and earning statistics were exacerbated by the global economic recession, Orfield introduced *Higher Education and the Color Line* with the following statement:

> For many families, however, the human capital gained through higher education has become the most important source of wealth and security that families can give their children. With the loss of industrial jobs and union wages, and with international corporations imposing global competition and driving down the real wages of relatively unskilled work that could be transferred to other countries, educational credentials and skills are increasingly important determinants of life chances. (Orfield, Marin, and Horn 2005, 3)

This section examines available data about Native Hawaiian enrollment in postsecondary education and degree attainment.

### Enrollment

Figure 5.78 draws on ACS data to present estimates for enrollment in postsecondary education by eighteen- to twenty-four-year-old Native Hawaiians living in Hawai‘i. After dramatic gains in postsecondary enrollment—as evidenced by UH system numbers reported in the 1983 and 1993 editions of the Native Hawaiian Educational Assessment (Kamehameha Schools/Bernice Pauahi Bishop Estate 1983)—enrollment rates for Native Hawaiians appear to have reached a plateau.

**FIGURE 5.78** Trends in college enrollment

[as a percentage of all young adults ages 18–24, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]

Postsecondary Education

- Native Hawaiian young adults had the lowest college enrollment rates among Hawai‘i’s major ethnic groups.

- In 2009, one in four Native Hawaiians between the ages of eighteen and twenty-four (25.7 percent) was enrolled in college, compared with one in three young adults (35.7 percent) statewide.

- Between 2003 and 2009, the rate of young adults enrolled in college increased at least 2 percentage points for every major ethnic group except Native Hawaiians, whose rates increased by 1.1 percentage points.

The greatest returns on education are seen for adults with graduate and professional degrees. Figure 5.79 presents data on the distribution of undergraduate and graduate/professional students by the major ethnic groups in Hawai‘i.

**FIGURE 5.79** Distribution of undergraduate and graduate or professional students by race/ethnicity
[as a percentage of all undergraduate and graduate or professional students, 2006–10, Hawai‘i]

- Native Hawaiians made up 16.8 percent of the undergraduate college population in Hawai‘i despite constituting nearly a quarter (23.5 percent) of the state’s population of eighteen- to twenty-four-year-olds (not shown).

- Native Hawaiians were even more underrepresented among graduate or professional students at 12.8 percent of this group.

*Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).*
The need to work can be a major challenge to degree completion (Bound, Lovenheim, and Turner 2007). Figure 5.8o shows the employment status of college students by race/ethnicity. The relatively high rate of employment among Native Hawaiian college students may partially explain lower postsecondary enrollment and completion rates within the Native Hawaiian population.

**Figure 5.8o** Distribution of undergraduate and graduate or professional students by employment status

[as a percentage of all undergraduate and graduate or professional students, by race/ethnicity, 2006–10, Hawai‘i]

- More than one in four Native Hawaiian college students (28.0 percent) worked full-time throughout the year while attending school.
- The rate at which Native Hawaiian students worked a full-year, full-time job was about 10 percentage points higher than that of Chinese and Japanese students (17.0 percent and 18.0 percent, respectively).
- The percentage of Native Hawaiian college students who held part-year, full-time employment was 12.7 percent, compared with 11.2 percent statewide.

Educational Attainment

The lower rates of postsecondary enrollment among Native Hawaiians are reflected in the statistics on educational attainment of adults ages twenty-five and older. Figure 5.81 shows the percentage of adults who have obtained a bachelor’s degree or higher.

**Figure 5.81** Trends in attainment of bachelor’s degrees or higher
[as a percentage of all adults 25 years and older, by race/ethnicity, 3-year weighted averages, selected years, Hawai’i]

- In 2009, approximately one in seven Native Hawaiian adults (14.3 percent) had obtained a college degree.
- The rate of bachelor’s degree attainment among Native Hawaiians was the lowest among the state’s major ethnic groups, which was less than half the statewide average (29.5 percent) and one-third that of non-Hispanic Whites (41.7 percent).
- The percentage of Native Hawaiian adults with a bachelor’s degree or higher increased by 5.7 percentage points between 1990 (not shown) and 2003, then plateaued between 2003 and 2009.

Data on graduate degree attainment depict similar racial/ethnic disparities but also highlight significant signs of progress in trends over time.
In 2009, the rate of graduate degree attainment among Native Hawaiians (3.9 percent) was less than half the statewide average (9.8 percent) and less than one-quarter the rate of non-Hispanic Whites (17.0 percent).

During the past two decades, the rate of graduate degree attainment among Native Hawaiians nearly doubled, from 2.2 percent in 1990 (not shown) to 3.9 percent in 2009.

We end this section with a look at educational attainment by region. Adults who have completed more formal education may contribute to intergenerational change. The mechanisms that drive such intergenerational improvements are complex and likely reflect both the increased social and economic capital in the community along with increased access to role models and higher expectations for the future educational pursuits of youth in the community.
The Kona O‘ahu area had the highest rates of college degree completion (associate’s degree or higher), where nearly one in three Native Hawaiian adults (32.4 percent) had a postsecondary degree.

In Ko‘olauloa–Ko‘olaupoko and ‘Ewa–Waialua, about one in four Native Hawaiian adults (26.1 percent and 24.2 percent, respectively) had an associate’s degree or higher.

The lowest rate of college degree completion was in Wai‘anae, where roughly one in ten adults (10.9 percent) had a college degree.
CONCLUSION

Over the last decade Native Hawaiians have made significant progress in cognitive well-being. Positive changes are apparent at multiple levels, from students to schools to whole communities. Among Native Hawaiian keiki we see growing preschool enrollment, higher test scores and proficiency rates, reduced special education referrals, and a shrinking achievement gap between Native Hawaiians and their non-Hawaiian peers. Predominantly Native Hawaiian schools have an increasingly equitable distribution of high-quality resources and infrastructure, with encouraging indicators of stakeholder satisfaction and school quality. At the community level, stakeholder feedback about school quality is largely the most positive in areas where Native Hawaiians are most highly concentrated (Moloka‘i) and most numerous (‘Ewa–Waialua).

However, significant challenges remain. Although the gap is narrowing in many areas, Native Hawaiian students continue to lag behind their non-Hawaiian peers in key areas of cognitive well-being, including reading and mathematics achievement, special education, high school graduation, and postsecondary outcomes. Native Hawaiian young adults are disproportionately absent from both school and the workforce.

Because early disparities in achievement typically grow into larger disparities over the course of formal education, high-quality learning opportunities are needed to help ensure that young Native Hawaiian keiki do not start their educational careers lagging behind their peers (Heckman 2008). At the same time, it is important to provide a system of supports and, where needed, remediation to achieve equitable educational outcomes (Tibbetts, Silverstein, and Ishibashi 2007). Current research (e.g., Pacific Policy Research Center 2011) suggests that collaborative approaches can substantially amplify the impact of individual programs and offer promise for creating broad, positive change.

Hawaiian-focused charter schools represent an important opportunity in Native Hawaiian education, striving to mitigate disconnects between home and school culture while fostering the development of strong cultural identities and community ties. The results of standardized tests suggest the impact of such strategies is not limited to the social-emotional development of keiki. For example, Native Hawaiian students in Hawaiian-focused charter schools start out at lower achievement levels than do their peers in noncharter public schools but make greater gains, closing the gap in reading proficiency by Grade 8. Students in Hawaiian-focused charters also make substantial improvements in mathematics proficiency, although the gap in proficiency remains essentially unchanged.

Clearly, the roots of the disparities in educational outcomes for Native Hawaiians are deep and complex. The solutions may be equally complex. Greater understanding of the personal, family, school, social-cultural, and political factors that promote or impede school success for Native Hawaiians is needed to develop programs and initiatives that eliminate disparities in educational outcomes. The identification and dissemination of successful methods used in Hawaiian culture-based education may help pave the way forward.