



HAWAI'I CHARTER SCHOOLS

Initial Trends and Select Outcomes for Native Hawaiian Students

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P A S E R E P O R T

Purpose of Our Study

Charter schools provide an opportunity for innovative educational approaches for Native Hawaiian children. We examine these benefits by comparing academic achievement and engagement outcomes of Hawaiian students in start-up charter and mainstream public schools.

What We Learned

- Native Hawaiian students in charter schools performed significantly better on the SAT-9 reading test than did comparable Native Hawaiian students in mainstream public schools, after adjusting for differences in student attributes (i.e., gender, socioeconomic status, and grade), teacher credentials, and region.
- On math tests, Native Hawaiian students in charter schools scored significantly higher than did their mainstream counterparts, again after adjusting for other explanatory variables.
- Native Hawaiian students attending charter schools tend to be more engaged in school and have significantly higher attendance rates than do their mainstream peers.

Key Implications

- Preliminary analysis suggests that charter schools offer an innovative and seemingly effective educational alternative for Native Hawaiian students.
- Our analysis is limited to “snapshot” outcomes that reflect student performance and engagement in a single year. As new data become available, longitudinal studies will help track the gains of individual students over time.

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Hawai'i Charter Schools:

Initial Trends and Select Outcomes for Native Hawaiian Students

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INTRODUCTION

Charter schools provide an opportunity for innovation and autonomy within the public school system. In recent years, the number of charter schools has exploded across the nation. Research to track this momentum has resulted in many studies that evaluate the educational effectiveness of charter schools and assess the academic outcomes of their students. We contribute to this research an analysis of charter school outcomes focused on Native Hawaiians—a population that has increasingly looked to the charter school movement as an opportunity for self-defined educational reform for its children.

Charter schools are publicly funded schools that are exempt from many state laws and regulations in exchange for a promise (through a charter or contract) that they will be accountable for student learning. In Hawai'i, the state Board of Education is currently the only agency in the state authorized to approve charters for schools. Hawai'i currently has twenty-seven public charter schools that serve more than five thousand students on four islands.

UNIQUE BENEFITS OF CHARTER SCHOOLS FOR INDIGENOUS CHILDREN

Several reasons lead us to expect that charter schools provide unique educational benefits to Native Hawaiians. First, on the whole, Native Hawaiian learners fare poorly in the public school system (Kana'iaupuni and Ishibashi, 2003). Charter schools represent an opportunity for Hawaiian families and communities to determine the form and content of their children's learning. Hawaiian ownership of "Hawaiian education" is an important way to engage the community and harness its strengths (Novak, 2004; Kana'iaupuni, 2004). Second, the autonomous nature of charter schools enables the

development of experimental and innovative approaches that may foster higher achievement and greater engagement among Native Hawaiian students. In an ethnographic study of predominantly Native American charter schools, Bielenberg (2000) argues that community control is not enough, and that the value of charter schools to indigenous populations lies in their potential for innovation.

Third, the drive within the state's charter schools for culturally based indigenous education is an approach that makes learning relevant and engaging for indigenous students (Martinez, 1999). Charter schools offer an ideal medium for the development and growth of culturally based education models, and Hawaiian communities have actively capitalized on this opportunity (Buchanan and Fox, 2003). Currently, twelve of the twenty-three start-up charters form Na Lei Na'auao, the Native Hawaiian New Century Charter School Alliance (see www.naleinaauao.org). Connecting schools on three different islands, the community-driven alliance exists to promote native-designed and controlled models of education and to assure the perpetuation of Hawaiian language, culture, and traditions into the new millennium. The ultimate goal of these objectives is to allow students, particularly indigenous students, to reach their highest level individually and collectively.

This analysis contributes an initial step in understanding some of the overall outcomes for Native Hawaiian students in charter schools. We perform a series of simple regressions to estimate how enrollment in charter schools affects the achievement and absenteeism of Native Hawaiian students while controlling for a number of other variables that might affect educational outcomes (e.g., grade level, gender, income, region, and teacher credentials).

Results of the analysis are encouraging. Native Hawaiian students who attend charter schools performed better on standardized measures of achievement and were less likely to be chronically absent from school than were comparable students in mainstream public schools. These findings highlight the critical role charter schools play in providing educational alternatives for many Native Hawaiian students whose cultural roots and socioeconomic background may create a poor fit for conventional public school classroom approaches. Further, the results highlight the early and preliminary successes achieved by charter schools in their efforts to develop innovative models of Hawaiian education.

PRIOR RESEARCH

What does the existing literature tell us about the effect of charter schools on children's educational outcomes?¹

EARLY STUDIES OFFER MIXED FINDINGS

Although charter schools are comparatively new, numerous studies have already attempted to assess and evaluate their effectiveness. The central question for each study is whether charter school students would have performed better and made greater gains had they attended conventional schools. So far, the results of these early studies offer mixed findings and suffer from limited data.

One major national study by the American Federation of Teachers (AFT) compared the achievement scores of students in mainstream schools with those of students in charter schools and found that charter school students lagged behind their mainstream counterparts by significant margins (Nelson, Rosenberg, & Van Meter, 2004). Another study, conducted in response to the AFT's negative findings, used a much larger sample (fully 99 percent of charter school students in the country rather than the 3 percent sample used by AFT) and derived more positive results: "...although it is too early to draw sweeping conclusions, the initial indications are that the average student attending a charter school has higher achievement than he or she otherwise would" (Hoxby, 2004, p. 3).

A recent report released by the U.S. Department of Education's Institute of Education Sciences in December 2004 drew mixed conclusions. The study found that charter school students scored as well as mainstream students of the same race on the reading and mathematics sections of the National Assessment of Educational Progress (NAEP). Different findings emerged among students who qualified for the subsidized school meals program for low-income families. Here, charter school students scored lower in both reading and math than did their mainstream counterparts on average. The authors of the report caution that they had no access to information on prior achievement of students or other factors that would likely contribute to the observed differences in NAEP scores.²

¹ For a more complete discussion of the national literature on charter schools, see forthcoming brief by Katherine Tibbetts (in production).

² Future studies by the Institute for Educational Sciences hope to provide a stronger basis for inferences about the relative effectiveness of charter and mainstream students.

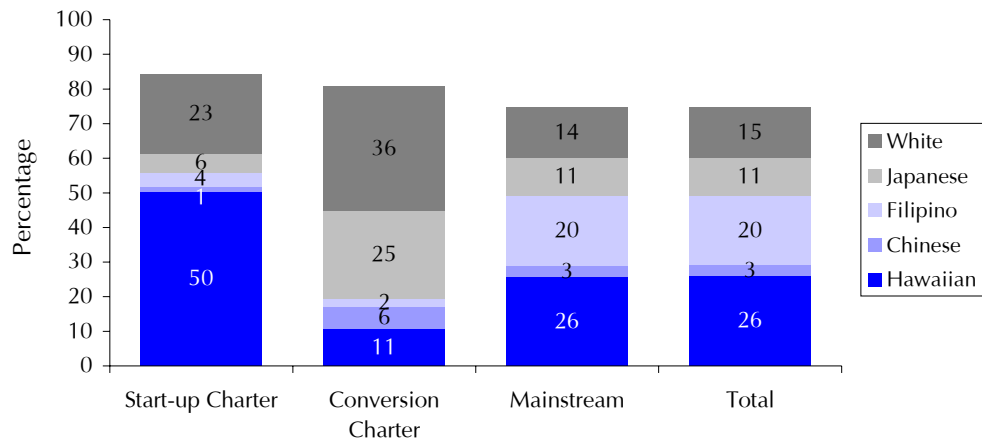
At the local level, charter school assessments have been more consistently positive. Hoxby's study performed a state-by-state analysis and found that charter school students in Hawai'i exhibited higher proficiency rates than did mainstream students in both reading and mathematics. And an analysis by the Hawai'i Educational Policy Center concluded that charter school students in Hawai'i outperformed their mainstream counterparts on the Hawai'i State Assessment and SAT tests in 2004 (Hawai'i Educational Policy Center, 2004).

The inconsistency of findings from charter school studies, at least at the national level, reflects the inherent complexities involved in assessing charter schools. Hill (2005) notes that differences in student populations—differences between charter school and mainstream students as well as differences among charter schools themselves—make charter school evaluations particularly difficult.

A CAUTIONARY NOTE

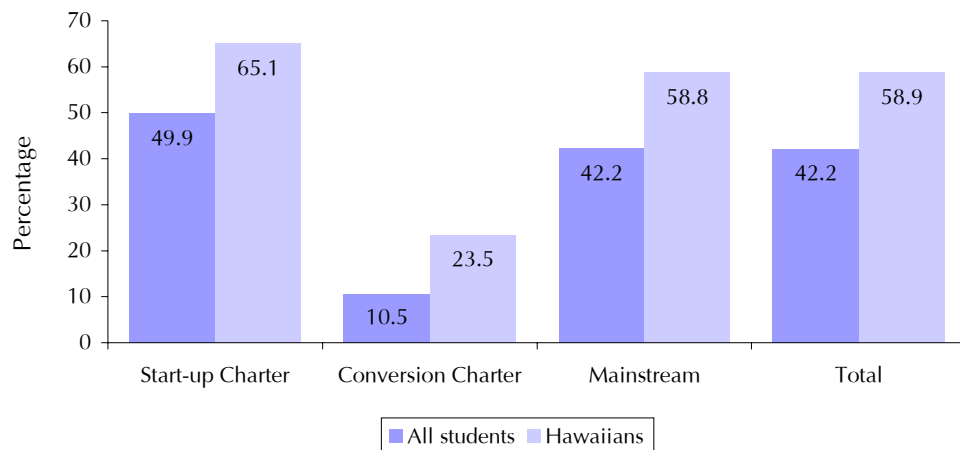
At least three observations challenge research efforts to understand educational outcomes of charter schools. First, charter schools serve a student body that is increasingly high in poverty and increasingly diverse, ethnically. A study by the U.S. Department of Education's Policy and Program Studies Services (2004) found that the prevalence of racial minorities and low-income students is significantly higher in charter schools than in conventional public schools and that the population of disadvantaged charter school students has grown substantially in the past two to three years (U.S. Department of Education, 2004). These national findings are mirrored within the Hawai'i population of public school students. Figure 1 and Figure 2 show that, compared to mainstream public schools, start-up charter schools serve a disproportionately high number of Hawaiians and subsidized meal program participants—two groups that, as a whole, are highly disadvantaged and more vulnerable to scholastic underperformance (Kana'iaupuni & Ishibashi, 2003). These differences may lead to underestimates of the true impact of charter schools, compared to mainstream education.

Figure 1: Ethnic composition of student population in public school system [by school type, school year 2002–03]



Source: State of Hawai'i Department of Education

Figure 2: Students participating in subsidized school meals program [by school type and student ethnicity, school year 2002–03]



Source: State of Hawai'i Department of Education

Beyond racial and socioeconomic differences, other unobservable factors may distinguish charter school students from mainstream students. For example, because enrollment in charter schools is voluntary, families who choose to have their children attend charter schools may have different motivations and different expectations of their schools than do families who opt to remain in conventional public schools. If these differences positively select certain kinds of people, for example parents who are more involved with the education of their children or those who have children with special needs, then our results may bias estimates of the impact of charter school education.

These issues present a challenge for research efforts to examine school effectiveness and to measure the progress of students.

A third potential challenge is that significant differences exist between charter schools—possibly more than might exist between mainstream schools. For example, individual charter schools differ substantially in the characteristics of their students, the school mission, the design of curricula, and instructional practices. Thus, aggregating students across schools may mask significant differences in conditions and outcomes between schools. This means that evaluation results for a particular school or a subset of schools may not be generalizable to the larger population of charter schools.

COMPARISON OF STUDENT PERFORMANCE

How do Hawaiian students in charter schools perform compared with Hawaiian students in conventional public schools?

DESCRIPTIVE FINDINGS

Bearing in mind these issues concerning charter school assessment, we conducted our own analysis of charter school outcomes focused on Native Hawaiian students. We compared the achievement and engagement of Native Hawaiian students in conventional public schools with Native Hawaiian students in charter schools, using simple descriptive statistics as well as multivariate regression analyses, which allow us to control for some student and school-level differences. To reduce differences among charter schools, we excluded conversion charter schools and instead focused our analysis on start-up charter schools alone.³

We looked at several outcomes: achievement, measured by two separate sets of reading and math test scores: the SAT-9 (percentile rank) and the Hawai'i State Assessment (scaled scores); and student engagement, measured by chronic or "excessive" absenteeism (defined by the Hawai'i Department of Education as twenty or more unexcused absences in a single semester). The analysis includes students whose parents reported part or full-Hawaiian as their child's dominant ethnicity to the Department of Education and who had non-missing data for the outcomes under consideration. To

³ Historically, conversion charter schools in Hawai'i have served a more socioeconomically advantaged population than is typical of most start-up charter schools (although this is changing with the recent conversions of Waimea Middle School and Kualapu'u Elementary School). The high numbers of students in conversion charter schools have the potential to bias our overall results.

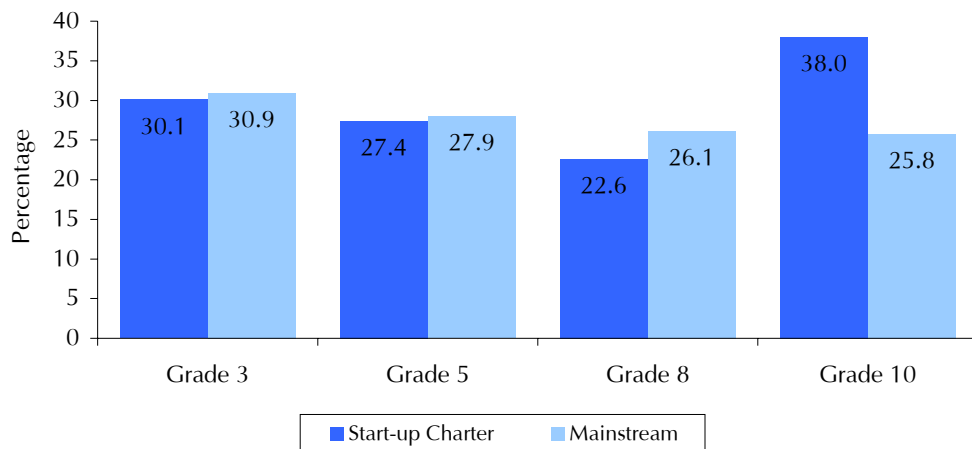
increase the sample size and power of our analysis and to ensure greater stability (specifically, to avoid effects that might represent a single atypical year), our sample includes pooled student data for school years 2001-02 and 2002-03. Table 2 summarizes the sample sizes used in our analyses by type of outcome.

Table 2: Sample sizes used in analyses

| | SAT-9 | HSA | Chronic absenteeism |
|---------------------------------|---------------|---------------|---------------------|
| Hawaiians in mainstream schools | 26,938 | 26,836 | 55,387 |
| Hawaiians in charter schools | 537 | 532 | 1,277 |
| Total | 27,475 | 27,368 | 56,664 |

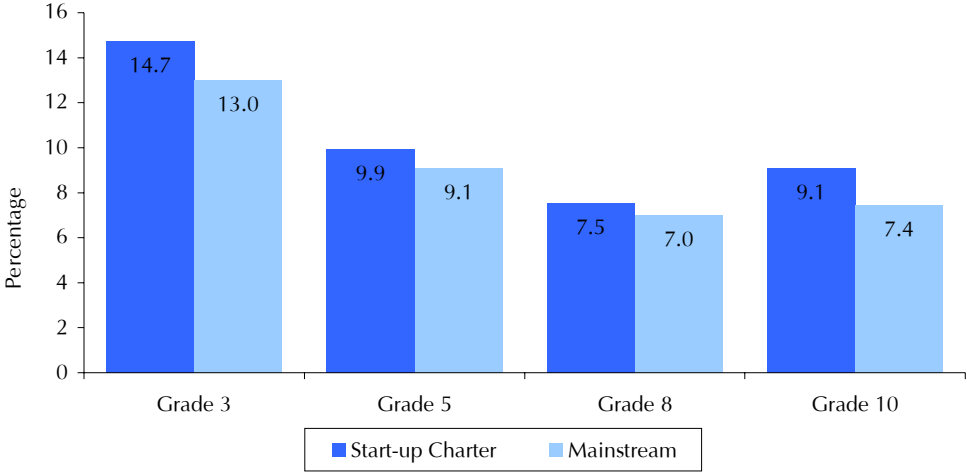
Descriptive comparisons of central tendency suggest roughly comparable achievement scores of Native Hawaiian students in charter schools and Native Hawaiian students attending mainstream schools, except in tenth grade reading proficiency. Figure 3 and Figure 4 show that the reading and math proficiency rates among Hawaiian charter school students and their mainstream counterparts were about even for each grade examined. However, the findings also indicate a statistically significant difference in reading proficiency rates for grade 10: Native Hawaiian students in charter schools were almost 50 percent more likely to score at the level deemed reading proficient than were Native Hawaiians in conventional public schools.

Figure 3: HSA reading proficiency rates among Native Hawaiian students [by school type, data aggregated across school years 2001–02 and 2002–03]



Source: State of Hawai'i Department of Education

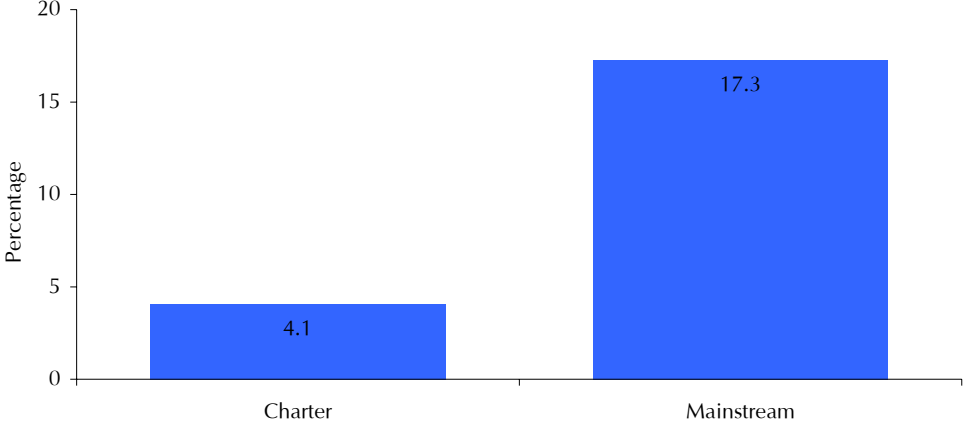
Figure 4: HSA math proficiency rates among Native Hawaiian students
[by school type, data aggregated across school years 2001–02 and 2002–03]



Source: State of Hawai'i Department of Education

In addition, statistically significant differences were readily apparent in the prevalence of excessive absenteeism among Native Hawaiians in charter schools and mainstream schools. Figure 5 shows that Hawaiian students in mainstream schools were more than four times as likely to be chronically absent from school as were their charter school counterparts.

Figure 5: Native Hawaiian students with excessive absences
[by school type, data aggregated across school years 2001–02 and 2002–03]



MULTIVARIATE FINDINGS

Preliminary conclusions drawn from the descriptive data indicate that, at the very least, Native Hawaiian students in charter schools perform as well as their mainstream counterparts. Yet, these findings do not account for the distinct populations served by charter schools. To examine the results more fully, we must account for the fact that charter school students are demographically distinct. Among other things, start-up charter schools tend to serve disadvantaged populations that have high minority representation and a high percentage of children from low-income backgrounds.

Our next step, therefore, consisted of a series of multiple regression analyses that estimated the effect of charter schools on Native Hawaiian achievement scores and absences, while controlling for other factors that have been shown to influence test scores.⁴ To account for the effect of student attributes, such as demographic characteristics and background, we included variables in our models for gender, grade level, year of testing, participation in the subsidized school meals program (the only available information on family socioeconomic status), school district (a proxy for regional differences), and teacher credentials (the percentage of teachers with provisional or emergency credentials).⁵ We also included interaction terms representing the relationship between grade level and school type because of the descriptive findings suggesting grade-specific effects for students in charter schools. Overall, the results of the analysis suggested that charter schools have a positive effect on the achievement and engagement of Native Hawaiian students.

Table 2 summarizes the results of our regression analyses, showing the direction (positive or negative) of the effect associated with each variable and each educational outcome.⁶

⁴ Linear regressions were used for analyses of test scores, and logistic regressions were used to analyze chronic absenteeism.

⁵ Earlier models of our regressions included school size as one of the control variables. The results were consistent and stable, whether or not the school size variable was incorporated. However, because research literature suggests a nonlinear relationship between school size and educational outcomes (i.e., student achievement does not consistently increase as school size decreases), the exact nature of which is unclear, we chose to remove the school size variable from our final models. Again, the effect of that omission was negligible.

⁶ As an additional precaution to address the individuality of charter schools, we also tested our findings excluding the Education Laboratory School, which is a University-based charter school designed for experimental school and curriculum development and that has consistently outperformed other schools for many years and because of its. Our findings are consistent, whether or not the Education Laboratory was included. Results reported in this brief include the Education Laboratory School.

Table 2. Effects of charter school enrollment on Native Hawaiian student test scores and excessive absences

[Multivariate regression analyses, pooled school years 2001, 2002]

| | READING | | MATH | | EXCESSIVE |
|-------------------------------------|----------|-----------|----------|----------|-----------|
| | SAT-9 | HSA | SAT-9 | HSA | ABSENCES |
| Charter school | + | ns | + | + | - |
| Female | + | + | + | + | ns |
| Subsidized lunch | - | - | - | - | + |
| Teacher credentials | + | + | + | + | ns |
| Grade level | | | | | |
| Grade 3 (test reference group) | | | | | |
| Grade 5 | - | - | - | - | |
| Grade 6 (absence reference group) | | | | | |
| Grade 7 (no testing)* | | | | | + |
| Grade 8 | - | ns | - | - | + |
| Grade 9 (no testing)* | | | | | + |
| Grade 10 | - | ns | - | ns | + |
| Grade 11 (no testing)* | | | | | + |
| Grade 12 (no testing)* | | | | | + |
| District | | | | | |
| Honolulu (reference group) | | | | | |
| Central O'ahu | ns | ns | ns | ns | ns |
| Leeward O'ahu | - | - | - | - | + |
| Windward O'ahu | ns | ns | + | + | + |
| Hawai'i County | - | - | - | - | - |
| Maui County | - | - | - | - | + |
| Kaua'i County | - | - | + | ns | + |
| Charter school x Grade** | | | | | |
| Charter x Grade 3 (reference group) | | | | | |
| Charter x Grade 5 | ns | ns | ns | ns | |
| Charter x Grade 8 | ns | + | ns | ns | |
| Charter x Grade 10 | + | + | ns | ns | |

"+" indicates that the variable has a positive effect on the outcome.

"-" indicates that the variable has a negative effect on the outcome.

"ns" indicates that the variable does not have a statistically significant effect on the outcome.

"(reference group)" indicates that the value listed is the reference group for a broader categorical variable.

For example, Honolulu serves as the reference group against which other school districts are measured.

Thus, the negative sign for Leeward O'ahu indicates that children in the Leeward O'ahu district score lower on achievement tests than do children in the Honolulu school district.

*Shaded cells indicate that a variable was not included in the analysis of this particular outcome. For both the SAT-9 and HSA scores, Grades 6, 7, 9, 11, 12 are shaded out because currently achievement tests are administered only in Grade 3, 5, 8, and 10. Similarly, for excessive absences, Grades 3 and 5 are shaded out because chronic absenteeism is not tracked at the elementary level.

**Interaction terms (i.e., charter x grade) were also excluded from the excessive absence analysis after earlier analysis showed no statistically significant differences in grade-level effects.

To sum, the results in this table indicate several significant findings that emerge after adjusting for individual and school-level attributes. Specifically:

- Hawaiian students in charter schools perform significantly better on the SAT-9 reading test than do comparable Native Hawaiian students in mainstream public schools, after adjusting for differences in student attributes (i.e., gender, socioeconomic status, and grade), teacher credentials, and region.
- We find significant differences in HSA reading test scores between Hawaiian students in charter schools and those in mainstream schools in grade 8 and grade 10, again after adjusting for other explanatory variables.
- Among tenth graders, we find that charter school students perform significantly better than do mainstream students on both SAT-9 and HSA reading scores.
- On math tests (both SAT-9 and HSA), Hawaiian students in charter schools scored significantly higher than did their mainstream counterparts, after controlling for gender, socioeconomic status, teacher credentials, grade level, and region.
- Finally, Native Hawaiian students attending charter schools tend to be more engaged in school, judging by their attendance rates. We find significantly reduced rates of excessive absenteeism compared to their fellow students attending mainstream schools. The odds that Native Hawaiian students in charter schools are chronically absent are about **74 percent lower** than the odds among their counterparts in conventional public schools (not shown).

CONCLUSION

This initial step represents an emerging understanding of the effects of charter school education for Native Hawaiian students, given limited available data. Although local and national studies of charter schools provide an important foundation and context, our analysis builds on these earlier works to offer a new perspective that is both more nuanced and more focused, utilizing multivariate statistical methods and student-level data, while centering our analysis on Native Hawaiian students. Our results underscore the importance of accounting for differences between students and schools. Whereas the unadjusted comparisons suggested few differences in student outcomes, after adjusting for individual and school-level attributes we found clear improvements in outcomes for Native Hawaiian students enrolled in charter schools in both achievement and attendance.

Overall, the results suggest benefits to Native Hawaiian children who face relatively suboptimal prospects in mainstream schools. It is important to add that these outcomes represent a snapshot of student achievement and engagement at a single point in time. For any school evaluation or student assessment, it is also critical to measure gains achieved over time because year-to-year data are volatile, particularly in newer and smaller schools. In addition, other benefits of charter schools include their unique culture and smaller community environment, which may affect other student and familial outcomes that we do not measure here. For these reasons, our analysis is preliminary; however, the results offer a starting point from which to begin more comprehensive research as new data become available.

More importantly, this analysis lends hope to the growing number of Native Hawaiians enrolled in charter schools and encouragement to the charter school innovators supporting these students. Their efforts to develop and pursue alternatives outside the conventional public school classroom have yielded promising results and strong prospects for the future of Native Hawaiian education.

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