The Academic and Occupational Outcomes of Residential High School Student Instruction

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Abstract

Residential or boarding schools can be traced to the early history of the United States. Initially developed to serve indigenous peoples, the residential school of the 21st century attracts and serves students from diverse ethnic, racial, socioeconomic and cultural backgrounds. This paper uses the population of graduates from a large high school with both residential and commuter students serving specifically students with Native Hawaiian ancestry. Using a sample of both residential and commuting students from the graduating classes of 1993, 1994 and 1995, the study compares outcomes such as high school graduation, college attendance, college graduation, occupational status and overall life happiness to determine the effects of residential status.

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A retrospective look at the boarding education of specifically indigenous people of America, has uncovered injustices, misguided judgment, and in many unfortunate cases, severe cruelty. Indeed, the White conquest of North America used boarding education to separate children from their familial customs and to acculturate them into a Christian society (Cooper, 1999). The literature is replete with negative examples of forced assimilation occurring throughout American History (Ellis, 1996; Trennert, 1988) as well as the consequence of these practices that disrupted family customs and the passing of legacies from one generation to another (Apple, 1996; Greenfield & Smith, 1999; Henderson, Kunitz, & Levy, 1999; Ing, 1991; Shaughnessy, Branum, & Everett-Jones, 2001).

In the more enlightened 21st century, there has been a resurgence of interest in residential education, but for different purposes and outcomes than the early American Indian Schools. Many contemporary residential schools attract and serve students from diverse ethnic, racial, socioeconomic and cultural backgrounds. According to the National Association of Independent Schools (NAIS), during the 2000-2001 academic year, 16 percent of residential school students were of a racial group other than white (NAIS, 2001). There are many reasons why parents seek boarding schools for their child(ren). While some parents desire to send a child to a residential school as an escape from neighborhoods influenced by drugs, violence or other negative factors, others see them as a solution to inadequate public schooling, problem families, or to provide a more highly structured environment for a child with difficulties (Hawkins, 1997; Smith, 2001). On the other hand, some parents seek residential schools for their child(ren) for the sole purpose of finding a quality educational experience. Regardless of the specific goal, parents expect that residential schools will provide environments with caring faculty and others whose sole interest

is to provide their child(ren) with an academically and socially positive experience, smaller class sizes, diverse curricula, excellent facilities, a wide-range of co-curricular activities and close interaction with teachers and counselors (McCoskey, 2002; The Association of Boarding Schools, 2002).

Today, there are over 42,500 students enrolled in more than 300 boarding schools across the country (Fleming, 2001). Boarding schools are divided into three categories:

- True (24 hour) Boarding Schools: Schools where all students are expected to reside on campus for the entire academic year.
- Boarding Schools: Schools that combine a majority of boarding students (at least 51%) with commuting students.
- Day Schools: Schools that combine a majority of commuting students (at least 51%) with boarding students.

Many schools have specific admission criteria, sometimes based on ability, religion or ethnicity. Others are military-based or provide a specialized training program (The Association of Boarding Schools, 2002). It is virtually impossible to describe boarding schools in the aggregate as each maintains a unique personality and purpose. Despite this nonuniformity, NAIS (2001) does report general trends and tendencies:

- On average boarding schools are small with the average enrollment being 275 students.
- Tuition is generally high, averaging approximately $25,000 per year.
- Slightly less than one-third of students receive financial assistance
- Class sizes tend to be small, averaging eight students per faculty member.

This paper uses the population of graduates from a large high school with both residential and commuter students serving specifically students with Native Hawaiian ancestry. Using a sample of both residential and commuting students from the graduating classes of 1993, 1994 and 1995,

the study compares outcomes such as high school graduation, college attendance, college graduation, occupational status and overall life happiness to determine the effects of residential status.

History of Residential/Boarding Schools

Residential/boarding education can be traced back to the earliest days of America. These schools were typically established by the clergy and catered mainly to privileged, wealthy and white male students. Families sent their sons to boarding schools to make them "Christian gentlemen" and to prepare them to become members of the social and economic elite (Kashti, 1998). Over the last 350 years, this type of residential education has undergone many changes. Beginning as schools for families of high socioeconomic status, residential schools focused on preparing children for college (Coalition for Residential Education, 2002).

The purpose and function of boarding education became bifurcated in the 19th century, when schools specific for Native American students were introduced to "civilize", acculturate, and assimilate youth (Greenfeld, 2001; Riney, 1998; Sanchez & Stuckey, 1999). Students were forcibly separated from their families, language and spirituality and were frequently unable to assimilate back into their tribal culture or be fully accepted into the dominant culture (Sanchez & Stuckey, 1999). Children were sent to schools all around the country teaching them "American" dress, manners, and job skills removing any resemblance of their native culture (The Library of Congress, 2002). Thousands of Native American children suffered from loneliness and some lost their lives to the rampant spread of influenza and measles. The most famous of the schools founded by Richard Pratt in 1879 was the Carlisle Indian Industrial School in Pennsylvania. In the Carlisle schools, the children were forced to convert to Christianity, speak English, and were given new names (Labriola Center, 2001; Adams, 1995). In 1905, Francis Ellington became

Indian Commissioner concentrating on Native American assimilation as a gradual process and placed greater emphasis on day schools. Using the information gathered in the Meriam Report released in 1926, John Collier, the Executive Secretary for the American Indian Defense Association, recommended that only older Native American children attend non-reservation boarding schools.

Following 1926, boarding education enrolled predominantly White, upper socioeconomic class students. Few boarding schools provided education to Native Americans or other ethnic minority groups.

Research on Residential/Boarding Schools

Empirical studies of the effects of boarding education are scant to non-existent. Most of the literature is anecdotal or limited to only one specific school. For example Smith (2001) and McCoskey (2002) reported that students in boarding schools learned independence, self-discipline, and self-confidence while they learned to work with and to lead others. Others reported that these students demonstrated a strong work ethic, excellent social skills, and positive attitudes (Hershey, 2002). Although the empirical data is absent, what we do know about factors pertaining to boarding students indicates that placing students in small groups fosters a close working relationship between teachers and students, thus enhancing learning (Lee & Smith, 1997). Additional research indicates that small dorm groups and access to an extensive support network, individual advisors, dorm staff, the school chaplain and school psychologist creates a sense of community and support among boarding students and reduces the stress that might be associated with being away from home (Ainslie, 1996).

Although not empirically based, Smith (2001) and McCoskey (2002) reported that students in boarding schools learned independence, self-discipline, self-confidence, and the

ability to work with and lead other students. Others believe that boarding students are more likely to demonstrate a strong work ethic, excellent social skills, and positive attitudes (Hershey, 2002). Practice-based literature indicated that placing students in small groups fostered a close working relationship between teachers and students, thus enhancing learning (Lee & Smith, 1997). The few studies that do exist suggested that small dorm groups and access to an extensive support network, including individual advisors, dorm staff, the school chaplain and school psychologist, created a sense of community and support among boarding students.

Education in Hawai`i

The introduction of Western education to Hawai`i can be traced to American Protestant missionaries who arrived from New England in 1820 with the mission to convert the Hawaiian people to the Christian faith and establish churches. In concert with their mission was the establishment of schools throughout the islands. Following in the traditions of the prevalent New England boarding schools, the education offered on the islands was to provide a good basic educational foundation heavily peppered with sound moral training.

The missionaries established boarding schools with diverse missions. Boarding schools like The Chief's Children School was created at the request of the Hawaiian ruling elite to prepare their children to assume their positions in society. Other boarding schools like Lahainaluna Mission Seminary on the Island of Maui were designed to train young males to assume the roles of teachers and religious leaders among the Hawaiian people (Daws, 1968)."

Historical Look at Kamehameha School. On November 4, 1887, the Kamehameha School for Boys opened with 35 students and four teachers. It was established through the will of Princess Bernice Pauahi Bishop as the sole beneficiary of her estate "to provide first and chiefly a good education in the common English branches, and also instruction in morals and in

such useful knowledge as may tend to make good and industrious men and women" (excerpt from the Will of Bernice Pauahi Bishop, www.ksbe.edu).

The first curriculum emphasized industrial training that was considered necessary to achieve personal and social success. Other subjects included English and penmanship; arithmetic, algebra and geometry; business and bookkeeping; mechanical drawing; geography and health (Chun & Agard, 1987). Funds offered by Charles Reed Bishop in 1888 were used to establish a Preparatory Department to educate and house primarily, homeless or orphaned young Hawaiian boys, aged six to twelve. Daily lessons included English, arithmetic, drawing, penmanship and singing (Black & Mellen, 1965). Unlike the affluent boarding schools of the mainland's east coast, Kamehameha opened its doors to those who would most benefit including many poor. And, unlike the misguided American Indian Schools, Kamehameha was not designed for acculturation but for education.

In 1891, the first graduation ceremony for the School for Boys was held with 14 graduates. In keeping with Mrs. Pauahi Bishop's wish that there be a school for boys and girls, the Kamehameha School for Girls opened on December 19, 1894, with 27 girls aged thirteen and above.

From those early beginnings, Kamehameha has grown to serve a population of over 3,800 students enrolled in kindergarten through high school plus 1,200 students in pre-kindergarten classes statewide. By the year 2005, total kindergarten through high school enrollment at the Kapālama, Hawai`i, and Maui campuses will exceed 5,000 students (Kamehameha Schools, 2001).

Children of Hawaiian ancestry continue to receive admission preference at Kamehameha. As part of the admissions process, students must fill out an application for enrollment, pass a

written examination and personal interview, and demonstrate their Hawaiian ancestry by submitting their own birth certificates along with the birth certificates of their parents and Hawaiian grandparents. According to Kamehameha's current statement of purpose:

> "Kamehameha School admits children who show potential for excellence and who are able, in a timely and satisfactory manner, to meet all academic, physical and religious activities requirements which together comprise the fundamental nature of a Kamehameha education: Comprehensive development of the mind, body and spirit. Kamehameha admits children on the premise that they have the intent and ability to ultimately graduate from Kamehameha." (Kamehameha Schools, 2002b).

Kamehameha is currently a college-preparatory residential and day school. At the oldest campus, the Kapālama campus located on the island of O`ahu, the majority of students commute from their homes. In addition, over 500 seventh through twelfth grade students live on campus. These are students whose primary residence is from one of the other Hawaiian Islands.

In Ke Ali'l Pauahi Bishops will, she stated that Kamehahema Schools were to enroll both day and boarding students allowing access to Kamehameha for children on Hawaii's neighboring islands. The mission of Kamehameha's boarding program is three tiered: (1) to promote Christian and Hawaiian values, (2) help students become respectful and responsible, (3) and to enrich the opportunities for boarding students. Each year, Kamehameha enrolls approximately 550 boarding students. Students live in sex segregated, mixed levels (9^{th} grade – 12^{th} grade) dormitories. The majority of the students live with roommates with a few single occupancy rooms. Each dormitory has at least on advisor with a few faculty who serve as the dormitory advisors. Meals are served family style during the weekdays and on holidays. In addition to the advisors, each dormitory has a council lead by students from each grade level. The council serves as an avenue for students concerns, to plan activities, and to promote student leadership.

Methodology

In December 2001, Kamehameha Schools of Hawai`i contracted the Rossier School of Education at the University of Southern California (USC) to perform a comprehensive study of the achievement, success and academic outcomes of former students and financial aid recipients who were influenced by the Kamehameha experience. This study is part of a comprehensive project entitled Completion, Persistence, Transfer and Success of Kamehameha Schools Students (acronym CP-TASKS). The project includes several cohorts of Kamehameha High School alumni as well as individuals who graduated from high schools other than Kamehameha but were beneficiaries of college financial aid from the Schools.

The project began with the Kamehameha graduates of 1993, 1994, and 1995 plus a set of students who graduated from other high schools during those same years but who received financial aid from Kamehameha for postsecondary study. The project will also include the graduating classes of 2001, 2002 and 2003.

The specific goals of CP-TASKS are to explore the relationships between college preparation programs, financial-aid and subsequent success in college attendance, retention, degree acquisition, and occupational success. In early February 2002, the project sponsored a series of focus groups with alumni, faculty, and administrators in order to gain an awareness of the unique features of the environment of the school and to hear alumni perspectives about the influence of Kamehameha Schools and/or subsequent financial aid. The resulting data were used to create and hone a final survey instrument designed specifically for Kamehameha alumni and former financial aid recipients.

Instrument

The final seven-part instrument consisted of 54 multi-part items covering demographics, Hawaiian culture, questions pertaining to junior and senior high school experiences, college

questions, college satisfaction, self-efficacy, locus of control, and others. The Hawaiian Culture Exploration Scale, consisting of five items, was based on the Multigroup Ethnic Identity Measure (MEIM) designed to assess ethnic identity. MEIM was confirmed by researchers (Roberts, Phinney, Masse, Chen, Roberts, & Romero, 1999) as a global composite scale across ethnicity (European American, African American, and Mexican American). Ethnic identity was found to be positively associated with psychological well-being such as optimism and self-esteem. Since virtually all Kamehameha students have multiple ethnicities, the original scale items were modified to ensure that when survey participants responded to the items it was in reference to their Hawaiian ancestry. We found consistent outcomes as a result of factor analysis and reliability analysis (alpha=.79) as seen in Table 1.

We created the Self-Perceived Discrimination scale to assess students' perceptions of discrimination based on ethnicity and/or gender. The three items composing this scale indicated a high reliability (α=.80; see Table 1). Problems with everyday living can also influence college students' success. We created a student life problem scale comprised of student reports of homesickness and problems with roommates, food, and transportation. Knowledge about financial aid and its processes can be highly effective in assisting students to complete their college degree. Two survey items were used to assess student knowledge on financial aid.

The self-efficacy scale (four items), locus of control scale (two items), and peer influence scale (two items) were used to investigate if social-cognitive factors influence student success. Self-efficacy has been found to be positively related with academic performance (Bandura, 1993; Multon et al., 1991; Pajares, 1996; Zimmerman, Bandura, & Martinez-Pons, 1992; Kim & Dembo, 2000). The self-efficacy scale in the present study was derived from Factors Influencing

Pursuit of Higher Education (FIPHE**)** Questionnaire (Harris, 1998; Harris, 2001; Harris & Halpin, 2002).

Locus of control pertains to an individual's perception of control over the environment. Our scale consisted of two items from the FIPHE Questionnaire. The peer influence scale measured the influence of peers on students' decision to go to college and consisted of two items.

College completion can be affected by student satisfaction with the college. We created the College Satisfaction scale with two items to assess students' rating about their colleges. Because job or family related responsibilities such as child care can be a factor influencing the student college completion rate, we included the job/family responsibility scale that was comprised of two items.

A very important outcome of interest to Kamehameha was alumni satisfaction with life. The CP-TASKS questionnaire included the Diener's Satisfaction with life scale (Diener, et al, 1985) that provides a reliable measure of general life satisfaction. The five items as shown in Table 1 were used with a seven-part Likert measure (strongly agree to strongly disagree). In our study, the five items produced an alpha coefficient measure of .91.

Eighteen variables were employed to identify the characteristics of the students who earned bachelor degrees. Nine measures were composed of multiple items and an additional nine single item measures were also used. All independent variables are provided in Tables 1 and 2.

Insert Tables 1 and 2 About Here

Sample

This analysis included respondents from the Kamehameha High School graduating classes of 1993, 1994, and 1995. The unweighted sample size was 376. To correct for response bias, a weighting algorithm was created using the variables of high school, gender, year of graduation, and boarding status. Because our outcome of interest was receipt of a bachelor degree, we limited our analyses to only those students who attended college.

Data Collection

Beginning in late April 2002, printed letters were sent to the last known address of each of the graduates and financial aid recipients asking them to respond to an Internet questionnaire. Follow-up hardcopies were sent to those not responding to the online request. To enhance the response rate, follow-up included email, printed letters, and telephone inquiries. Slightly more than one-third of the submitted responses (36.2%) were received on line while the majority were submitted via hardcopy. The response rate calculated as the proportion of returned surveys (either online or via hardcopy) to those that were successfully delivered[1] is somewhere between 30% and 60%.

In October of 2002, the CP-TASKS research team administered a short survey to 35 private schools in the state of Hawai`i to collect data on educational outcomes such as high

[1] The last known address of the sample was the residence during their senior year in high school. Since the sample was the graduating classes of 1993, 1994, and 1995, the addresses were more than 7 years old. Further, these addresses were typically those of the alumni's parents or other relatives. In most cases, the alumni no longer lived at the address but the parents or other relatives forwarded the survey. Attempts to contact a subsample of 100 randomly chosen names indicated that only 40% of the available contact information was current. If considering only those students who likely received the survey, the actual response rate may be close to 60%.

school graduation rate, college attendance rate, and college graduation rate. This information was necessary to place Kamehameha within the context of other private schools in Hawai`i. The original research was the only way to gather this type of information due to the paucity of research and available statistics on private schools in the state.

Analyses

We report three levels of analyses. First, we provide comparisons of Kamehameha with other institutions on a national and statewide basis. Secondly, we provide a discriminant function equation to test for factors separating those who graduate from college from those who have not using boarder status as one of the test variables. After finding a significant relationship, we compare those who boarded at Kamehameha from those who did not through a oneway analysis of variance. We test for differences across the following outcomes:

1. Earned Bachelor degree
2. Level of reported parent-education
3. Life satisfaction
4. Reported level of Hawaiian ancestry (blood quantum)
5. Hawaiian culture scale scores
6. Receipt of social welfare benefits
7. Level of standard English spoken in the home
8. High School GPA

Results

Kamehameha is one of more than 300 boarding schools across the country and one of three boarding schools belonging to the *Hawai`i and National Association of Independent Schools*, the national advocate for independent pre-collegiate education (NAIS, 2002). Table 3 provides a comparison of these three schools and averages reported by the National Association of Independent Schools (NAIS). NAIS collects data on each of the 1,032 member schools, including Kamehameha Schools.

The two other boarding schools located in Hawai`i are Mid Pacific Institute located on the island of O`ahu and Hawai`i Preparatory Academy located on the island of Hawai`i. Table 3 shows that although all three schools share some similarities, Kamehameha has several unique characteristics. Besides being the oldest and largest boarding school in the group, Kamehameha is most distinctive due to its low tuition. In addition, whereas the majority of Kamehameha students receive financial aid (within a reduced tuition institution) only a minimal proportion of students from other schools (with much higher tuition rates) are similarly receiving aid. Clearly, Kamehameha serves a different group of students than do the other boarding schools.

Table 4 compares Kamehameha against the self-reported results of selected institutions from the data collected as part of the CP-TASKS project. We also provide NAIS averages for purposes of comparison. A common thread among the day schools is the promise of success, especially in the areas of high graduation and college attendance figures.

Insert Tables 3 and 4 About Here

We stress that Kamehameha is unique. In comparison to other day schools and the NAIS national averages, the tuition is minimal and the proportion of students receiving financial aid is far higher than any other school. In many respects, the students who attended Kamehameha are more comparable to public school students than those who attended other private schools.

A study by Kamehameha Schools (2001) investigated Hawai`i public school graduation rates by the dominant ethnicity of the student. Making allowances for transfers to other school systems, private schools, or other educational opportunities this study counted students who graduated within four years or made such transfers as "successes". The finding was that 90% of Japanese students, 83% of Caucasian students, and 82% of Filipino students graduated within

four years or left for another school system. However, only 72% of Hawaiian students fell into these two categories.

A broad comparison against national and state averages clearly shows the commendable success rates of Kamehameha Schools. Only 71% of the nation's high school students graduate from high school while the state of Hawai`i reports a 69% rate. Kamehameha records an approximate 99% rate.

The national figure for the proportion of high school graduates who attend college varies by ethnicity. According to the High School and Beyond Study, the national rate for Whites was about 64% (U.S. Department of Education, 1992). The national studies do not report outcomes by Hawaiian ancestry. Our weighted data indicated that 92.6% of Kamehameha students attended college. Study data also indicate that 64.5% of the classes of 1993, 1994, and 1995 earned at least a bachelor's degree. In the most recent national longitudinal study of beginning postsecondary students (entering college in 1995), 53.3% of students with a bachelor's degree goal had earned those degrees within six years (U.S. Department of Education, 2002).

Discriminant Function – How do graduates and non-graduates differ?

We created a discriminant function equation to identify the factors that best separate those students who completed their bachelor's degrees from those who have not. We identified nineteen independent variables and entered them into a stepwise regression equation to determine those items and scales that significantly affected degree attainment. The classification procedure generated a discriminant function consisting of a linear combination of independent variables best predicting group membership. The canonical correlation was .63 (Table 5) while Wilks' Lambda was .59 ($p<.05$). Standardized Canonical Discriminant Function Coefficients

and Canonical Discriminant Function Coefficients were provided in Table 6. Note that the table is in descending order by standardized coefficient.

Insert Tables 5 and 6 About Here

One of our main variables of interest was boarding status. The function for boarder status was negative indicating that students who boarded at Kamehameha were less likely to complete their bachelor's degree than were non-boarders. This finding, however, must be carefully interpreted with others to fully understand the interplay of boarders and other factors playing prominent roles in the equation. Further, the absolute value of the coefficient for boarder status was one of the weaker predictors (rank of 11 out of 16). 'Financial Aid from Kamehameha' was found to be strongest factor differentiating group membership (college completion vs. non-completion). The longer financial aid was provided (financial aid was measured in units of number of years of support and not dollars), the more likely students were to acquire a college degree. The strongest of the negative predictors was Social Welfare Benefits. Students from families who received Social Welfare Benefits, were less likely to finish their bachelor's degree. Also, when students reported financial responsibility for others they were also less likely to complete college degrees. Financial Aid Information also significantly predicted college completion. The more knowledgeable students were more likely to finish college.

Parent Education Level was a positive predictor of college completion. High parent education level positively predicted high college completion rates. Meanwhile, beginning one's postsecondary education at a community college was negatively related to college degree attainment.

High School GPA and Standard English as the predominant spoken language at home were positively related to college completion. We also note interesting cultural relationships to college completion. For this sample, Hawaiian Culture Exploration and the number of closest friends in College who were Hawaiian positively predicted students' college completion. College satisfaction and the tested social-cognitive factors were significant predictor variables of college completion.

The full discriminant function equation used to classify group membership predicting college completion follows:

D (Group Membership) = (-4.34) + (-.44) x Boarding Status + (.02) x Parent Education Level + (-.92) x Social Welfare Benefits + (.28) x Standard English Speaker + (.02) x Hawaiian Culture Exploration + (.19) x High School GPA + (-.14) x Number of People Supported + (.31) x Financial Aid from Kamehameha + (-.13) x Family/Job Responsibility + (.05) x Number of Closest Hawaiian Friends in College + (.09) x Financial Aid Information + (-.17) x High School Peer Influence + (.06) x Self Efficacy + (.21) x Locus of Control + (.11) x College Liking + (-.88) x Community College Starter.

A correlation table of the nineteen variables used in the analysis is provided as Table 7.

Insert Table 7 About Here

Pairwise Comparisons

Finding that boarders at the school had lower acquisitions of bachelor degrees, we performed pairwise comparisons across eight variables of interest. Table 8 provides the results of the analyses. We found that boarders in the sample had significantly lower high school grades, were less likely to have been raised in homes where standard English was the predominant language, were more likely to have received some form of social welfare assistance, had higher levels of Hawaiian ancestry, expressed higher levels of belonging to the Hawaiian ancestry,

lower levels of life satisfaction, and were less likely to have earned a bachelor's degree. In addition, we provide Figures 1a through 1e to display these differences graphically.

Insert Table 8 and Figures 1a – 1e About Here

Discussion and Policy Implications

It is clear to see that not only does Kamehameha serve a unique population; but does so in a distinctive fashion. Unlike other boarding schools in the state, Kamehameha serves many students with financial aid needs. But despite the lower socioeconomic status of its students, Kamehameha has the same admirably high graduation and college attendance rates as other schools. Recognizing the lower financial abilities of many of the families served, Kamehameha charges the lowest tuition rates of all private day schools in the state. For many reasons, the types of students who attend Kamehameha are more comparable to those attending public schools in the state. However, when comparing Kamehameha's student success rate with public schools outcomes, the difference is clearly in KSS's favor.

With the favorable outcomes clearly stated, it is important to extend the field of inquiry beyond college attendance and study the college graduation outcome. Our discriminant function analysis clearly revealed that the strongest variable that separated the college completers from the non-completers was receipt of college financial aid from Kamehameha. This function was almost twice as strong as the effect of a high grade point average in high school. This finding underscores the importance of financial aid for this group of students. The need for financial aid is also seen by the negative coefficient for receipt of social welfare benefits while in high school as well as the negative coefficient for the financial support of others. Other important variables included Hawaiian culture, locus of control, and family predominance of standard English. The

negative nature of beginning college at a community college must be noted. While students attend community colleges for many reasons, it is important to note that beginning in a four-year college is more likely to predict college completion.

One of our important inquiries for this study was the relationship between boarding status and college graduation. In our multivariate discriminant analysis we found that boarding status was a negative predictor. To better understand the differences between boarders and day students we performed our ANOVA analyses that provided insights as to why boarders were less likely to complete college. First, we found that boarders tended to have lower high school grades, be more likely to have received social welfare benefits, and less likely to come from families that spoke predominantly standard English. We see all of these factors to work together and in conjunction to predict lower college completion rates. Since life satisfaction levels were also lower for boarders, we hypothesize that the relationship likely includes but goes far beyond the lack of college completion.

We see many avenues for policy arising from these analyses. First, to assist students of Native Hawaiian ancestry, the continued provision of financial aid appears key. Boarding students may face additional obstacles when the outcome is focused on achieving a college degree. It is important to note that the reason most students board at Kamehameha is because they live on islands other than Oahu. Thus, boarding status may also function as a proxy for a more rural upbringing. Further, the economy on different islands is such that there may be a different link between desirable occupation and education. Many attractive jobs in tourism do not require a college degree. Agriculture, another prominent occupation on some islands also lacks a strong and direct link with college attainment.

Conclusions

This study is not an evaluation or a political comment on the efficacy of private boarding education. Further, it is not the intent of this paper to claim the acquisition of a bachelor's degree as the ultimate goal of all people. Rather, the intent of these analyses was to provide a comparison of actual outcomes between former boarding and commuting students who attended the SAME school, the same kinds of classes, and interacted with the same faculty. Although all significant findings cannot be attributed solely to residential status, the design of this analyses with the entrance of appropriate controls, presents an empirical analysis that can inform not only Kamehameha Schools but also other private residential high schools on the factors most likely to promote success long after the caps and gowns are returned and the senior yearbook is put on the shelf.

Table 1. Psychometric Properties of Scales

Measures	Mean	Alpha Reliability
Hawaiian Culture Exploration: - I have spent time trying to find out more about Hawaiian history, traditions, and customs - I am active in organizations or social groups that include mostly Hawaiians - I think a lot about how my life will be affected by my Hawaiian ethnicity - In order to learn more about my Hawaiian heritage, I have often talked to other people about my Hawaiian ethnicity - I participate in Hawaiian cultural practices such as special food, music, or customs	3.6106	.7879
Self-Perceived Discrimination: - My skin-color does not limit my ability to succeed in life - My gender does not limit my ability to succeed in life - Society does not limit my ability to succeed in life.	4.3401	.7975
Student Life Problems: - Homesickness - Living with roommate(s) - College food - Transportation (access to public transportation, sharing cars, etc.)	1.7694	.6197
Financial Aid Knowledge: - I was knowledgeable about the types of financial aid available to me - I knew where to find information about financial aid	2.9345	.9059
High School Peer Influence: - I was not able to talk to my high school friends about college - My high school friends did not understand the demands of college	3.2916	.7965
Self-Efficacy: - I chose my college major because I was good at it - I chose my college major because I found the work challenging - I believed I would be successful at my college major - I considered myself a good college student	2.9393	.7197
Locus of Control: - I had the power to achieve my educational goals - I felt that each person had control of his/her own fate	3.3317	.5341

Table 1 Continued		
College Satisfaction: - How well did you like college when you were an undergraduate - If you could do it over again, would you attend the same undergraduate college?	3.7994	.5691
Life Satisfaction: - In most ways my life is close to my ideal. - The conditions of my life are excellent. - I am satisfied with life. - So far, I have gotten the more important things I want in life. - If I could live my life over, I would change almost nothing.	4.9771	.9104
Family/Job Responsibility - Job related responsibilities - Family responsibilities (e.g. child care, parent care)	1.7261	.4932

Table 2. Single Item Measures

Boarding Status	Boarded (1) or commuted (0) while in high school
Parent Education Level	Composite score of mother's and father's education level
Social Welfare Benefits	Family received social welfare benefits while student was growing up
Standard English Speaker	Primary language spoken in the home
High School GPA	Self reported high School grades
Number of people that the students supported	Number of people the student was supporting at the time of high school graduation
Financial Aid from Kamehameha	Number of years received college financial aid from Kamehameha Schools
Number of closest Hawaiian friends in college	Number of closest personal friends in college from Hawaii
Community College Starter	Begin postsecondary education at a community college

Table 3. A Comparison of the Three Boarding Schools of Hawai`i

	Kamehameha	Mid Pacific Institute	Hawai`i Preparatory Academy	NAIS Averages
Established	1887	1908	1949	N/A
Boarders	Grades 7-12 528	Grades 6-12 80	Grades 6-12 195	All grades 120
Day (Grades K-12)	1,913	1030	395	97
Average Tuition Boarders Day	 $2,824 $1,441	 $18,787 $11,190	 $23,925 $10,917	 $26,975 $14,150
Percentage of students receiving financial assistance	62%	15%	20%	20%
Average student-to-teacher ratio	14:1	8:1	10:1	8.7:1
Graduation Rates	99%	100%	100%	N/A
Reported College Attendance Rate	98%	98%	100%	N/A

NAIS, HAIS, PASE, and Peterson's Guide to Private Schools 2000-2001 Data

Table 4. A Comparison of the Private Day Schools in Hawai`i

	Kamehameha	St Andrews Priory School for Girls	Iolani School	Academy of the Pacific	Punahou School	Hawai`i Baptist Academy	Saint Louis School	Maryknoll School	Island School	NAIS Averages
Established	1887	1867	1863	1961	1841	1949	1846	1927	1977	N/A
Average Tuition	$1,441	$8,750	$10,300	$10,700	$10,950	$7,590	$7,475	$8,300	$7,230	$14,150
Percentage of students receiving financial assistance	62%	32%	12%	30%	14%	8%	NA	17%	NA	20%
Average student-to-teacher ratio	14.1	7:1	11:1	8:1	15:1	13:1	13:1	13:1	8:1	8.7: 1
Graduation Rates – all students	99%	100%	100%	100%	100%	100%	99%	100%	100%	N/A
College Attendance Rate	98%	100%	100%	100%	100%	100%	96%	99%	85%	N/A

Table 5. Multivariate Statistics for the Discriminant Function Analyses

Function	Canonical Correlation	Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.638	1	.593	675.872	16	.00

Table 6. Standardized Canonical Discriminant Function Coefficients and Canonical Discriminant Function Coefficients (presented in descending order by standardized coefficients)

	Standardized Canonical Discriminant Function Coefficients	**Canonical Discriminant Function Coefficients (Unstandardized coefficients)**
Financial Aid from Kamehameha	0.53	0.317
High School GPA	0.285	0.191
Locus of Control	0.216	0.218
College Liking	0.211	0.112
Self Efficacy	0.135	0.063
Standard English Speaker	0.131	0.28
Financial Aid Information	0.13	0.092
Hawaiian Culture Exploration	0.095	0.022
Number of Closest Hawaiian Friends in College	0.088	0.056
Parent Education Level	0.059	0.028
Number of People Supported	-0.081	-0.146
Boarding Status	-0.19	-0.447
Family/Job Responsibility	-0.204	-0.139
High School Peer Influence	-0.235	-0.179
Community College Starter	-0.285	-0.887
Social Welfare Benefits	-0.313	-0.927

Table 7. Correlation Matrix

	College Completion	*Boarder Status*	*Life Satisfaction*	*Parent Education Level*	*Social Welfare Benefits*	*Standard English Speaker*	*Hawaiian Cultural Exploration*	*Self-Perceived Discrimination*	*High School GPA*	*Number of people supported*	*FA from Kamehameha*
	1	** -.163	** .313			.103	** .159	.016		** -.104	
College Completion				**.155	** -.176				** .437		** .440
BOARDER	** -.163	1	**- 135	.045	*.052	** -.228	.018	** .089	** -.190	-.004	.038
Life Satisfaction	** .313	** -.135	1	** .138	** -.113	** .081	** .247	** .237	** .346	** -.051	** .155
Parent Education Level	** .155	.045	** .138	1	** -.177	** .266	.047	.038	** .177	-.012	.031
Social Welfare Benefits	** -.176	* .052	** -.113	** -.177	1	** -.149	** .184	.021	** -.074	** .144	.034
Standard English Speaker	** .103	** -.228	** .081	** .266	** -.149	1	** -.076	** .079	.046	** -.141	** -.080
Hawaiian Cultural Exploration	** .159	.018	** .247	.047	** .184	** -.076	1	** -.066	** .224	.013	** .101
Self-Perceived Discrimination	.016	** .089	** .237	.038	.021	** .079	** -.066	1	-.036	.005	-.002
High School GPA	** .437	** -.190	** .346	** .177	** -.074	.046	** .224	-.036	1	** -.094	** .238
Number of people supported	** -.104	-.004	* -.051	-.012	** .144	** -.141	.013	.005	** -.094	1	-.006
FA from Kamehameha	** .440	.038	** .155	.031	.034	** -.080	** .101	-.002	** .238	-.006	1
Living Problem	** .071	-.025	-.037	.034	** -.117	.018	.010	** -.121	-.020	** -.085	** .210
Family/Job Responsibility	** -.181	* .063	** -.194	** -.106	** .235	** -.165	** .143	** -.185	** -.132	** .300	** -.085
Number of closest Hawaiian friends	.023	.044	** .127	** -.074	.005	* -.052	** .245	** .131	-.016	** .068	-.004
Financial Aid information	** .297	** -.065	** .311	** .123	*-.060	-.006	* .243	** .086	** .172	.033	** .311
High School PeerInfluence	** -.116	** .171	.031	.035	** -.144	* .050	* -.050	** .140	-.029	-.040	-.048
Self-Efficacy	**.277	** -.065	** .346	.000	* .066	* .057	** .263	* .063	** .322	** .099	** .104
Locus of Control	**.230	* -.063	** .302	* .056	-.038	* .051	** .116	** .210	** .194	.033	** .136
College Liking	** .264	.045	** .356	** .164	-.031	-.014	** .098	** .135	** .200	** -.071	** .185
Community College Starter	** -.333	** -.073	-.048	** -.138	.026	* .054	-.021	.017	** -.294	** .112	** -.289

Table 7 Continued Correlation Matrix

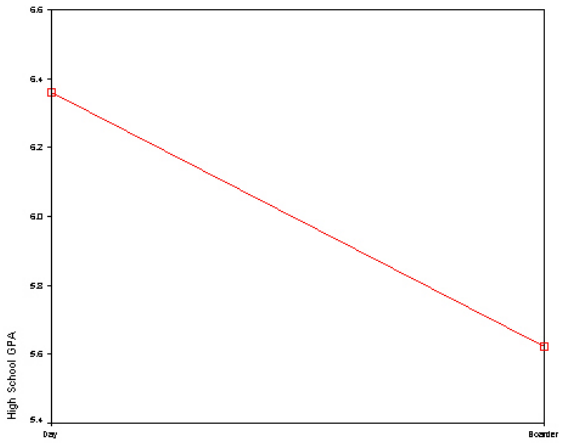
	Living Problem	*Family/ Job Responsibility*	*Number of Closest Hawaiian friends*	*Financial Aid information*	*High School PeerInfluence*	*Self-Efficacy*	*Locus of Control*	*College Liking*	*Community College Starter*
	** .071	** -.181	.023	**.297	** -.116	** .277	** .230		** -..333
College Completion								** .264	
BOARDER	-.025	* .063	.044	**-.065	** .171	** -.065	.063	.045	** -.073
Life Satisfaction	-.037	* -.194	**.127	** .311	.031	** .346	** .302	** ..356	-.048
Parent Education Level	.034	* -.106	** -.074	** .123	.035	.000	* .056	** .164	** -.138
Social Welfare Benefits	** -.117	** .235	-.005	* -.060	** -.144	* .066	-.038	-.031	.026
Standard English Speaker	.018	** -.165	* -.052	-.006	* .050	* .057	* .051	-.014	* .054
Hawaiian Cultural Exploration	.010	** .143	** .245	** .243	* -.050	** .263	** .116	** .098	-.021
Self-Perceived Discrimination	** -.121	** -.185	**.131	** .086	** .140	* .063	** .210	** .135	.017
High School GPA	-.020	** -.132	-.016	** .172	-.029	** .322	** .194	** .200	** -.294
Number of people supported	** -.085	** .300	** .068	.033	-.040	** .099	.033	** -.071	** .112
FA from Kamehameha	** .210	** -.085	-.004	** .311	-.048	** .104	** .136	** .185	** -.289
Living Problem	1	** .078	** -.099	-.004	** -.085	** -.073	** -.127	** -.124	** -.188
Family/Job Responsibility	** .078	1	-.008	* -.061	** -.175	** .087	-045	** -.149	** .099
Number of closest Hawaiian friends	** -.099	-.008	1	** .176	** .177	.032	**.153	* -.058	.034
Financial Aid information	-.004	* -.061	** .176	1	** .068	** .258	** .363	** .253	-.030
High School PeerInfluence	** -.085	** -.175	** .177	** .068	1	-.040	** .145	.035	** .082
Self-Efficacy	** -.073	** .087	.032	** .258	-.040	1	** .450	** ..307	** -.116
Locus of Control	** -.127	-.045	** .153	** .363	** .145	** .450	1	** .253	-.034
College Liking	** -.124	* -.149	* -.058	** .253	.035	** .307	** .253	1	** -.087
Community College Starter	** -.188	** .099	.034	-.030	** .082	** -.116	-.034	** -.087	1

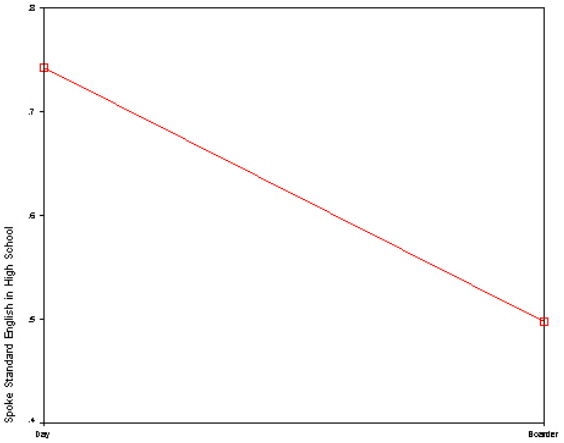
Table 8. Results of Pairwise Analyses (ANOVA)

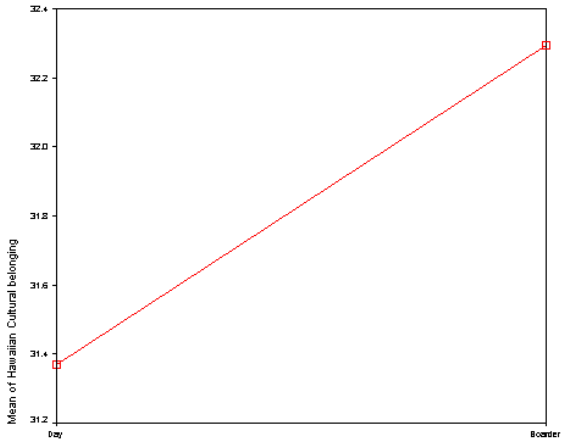
Outcome	Day Student Mean (s.d.)	Boarder Mean (s.d.)	F- Test
High School GPA[2]	6.36 (1.62)	5.62 (1.78)	59.199***
Spoke Predominantly Standard English while in High School (0=no; 1=yes)	.74 (.438)	.50 (501)	86.491***
Level of Parent Education	6.84 (2.188)	7.08 (2.11)	2.99
Received Social Welfare Benefits while in High School (0=no; 1=yes)	.12 (.33)	.16 (.37)	3.916*
Hawaiian Cultural Exploration scale	18.01 (4.36)	18.19 (5.20)	0.501
Hawaiian Belonging Scale	31.37 (3.87)	32.30 (3.24)	18.528 ***
Level of Hawaiian Ancestry (reported blood quantum)	.284 (.183)	.376 (227)	61.429***
Life Satisfaction	25.434 (6.46)	23.246 (8.199)	29.661***
Earned Bachelor Degree	.70 (.457)	.53 (.500)	43.215 ***

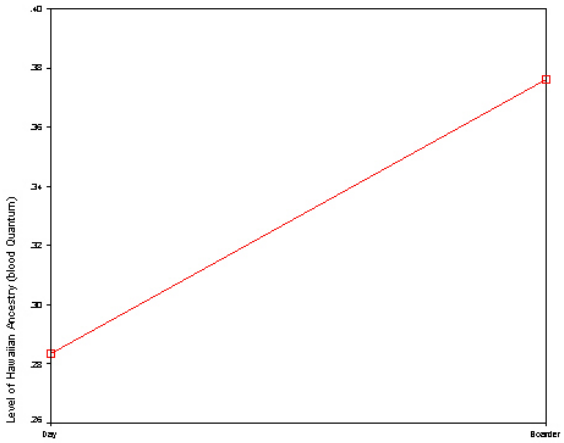
[2] 9=A or A+; 8= A-; 7=B+; 6=B; 5=B-; 4=C+; 3=C; 2=C-; 1=D or lower

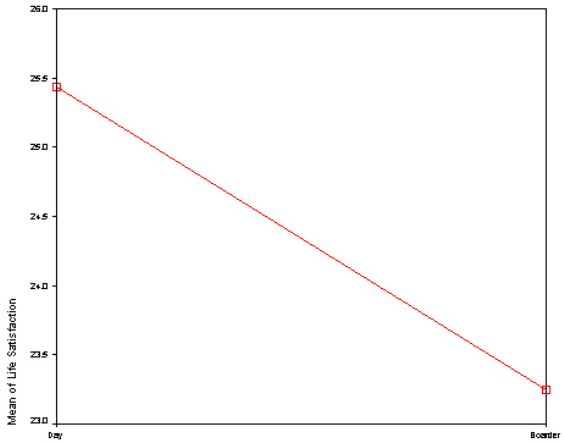
Figures 1a – 1e. Graphical Display of statistically different comparisons between Day and Boarding Alumni











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