

The Influence of Self-Efficacy and Hawaiian Identity on Academic Performance among First
Year Native Hawaiian Community College Students

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Abstract

Improving programs and strategies addressing the long-term historical effects of language loss and cultural practices in the current education system for the Hawaiian population is at the forefront of educational research in Hawai‘i. This study focused on the effects of academic self-efficacy and Hawaiian identity on academic achievement among first year Native Hawaiian students at a community college in Honolulu. The study was framed by Bandura’s (1989) concept of triadic reciprocal causation. Factor analysis and structural equation modeling were employed to examine the structure of the latent factors, self-efficacy and Hawaiian identity, and their relationship to each other and their effects on GPA, persistence and grades in English, math, Hawaiian studies and Hawaiian language courses. Results revealed significant positive relationships between all the factors representing the two latent constructs. One factor, representing students’ self-efficacy in engaging in classroom activities, positively affected GPA. Self-efficacy in understanding what one was learning and being able to study and manage one’s time had a positive effect on students’ Hawaiian language grade. Recommendations are provided to improve measurement of Hawaiian identity through application of Critical Race Theory to scale development. Alternate ways to define and measure success such as community engagement, giving back and through use of student goals are suggested.

Preface

Through this process, I frequently experienced internal conflict and discourse. I have always been naturally drawn to quantitative methods and the need to help understand more about Hawaiian students in postsecondary education. My intention was to add to the body of research that would help my community and Hawaiian students. As I learned more, the majority of research on this topic by indigenous researchers was qualitative. I read eloquent and poignant bodies of work that told stories and counter-stories that revealed untold truths about our history and their effects on us as a people influencing our success in educational institutions. This dissertation is my first attempt, as a young Hawaiian researcher. I struggled, and learned, doubted and persevered. I worked hard to approach this from a perspective that was true to who I am and that was pono (right). Personally, I don't think I accomplished that, however, I present this piece as a start to my journey as a researcher. Most of the students I work with at Kapi'olani Community College know that I have been pursuing my doctorate. I hope that their knowledge of my journey and my accomplishment serves as a model for their own journeys. Most will never read this, however, they see a fellow Hawaiian wahine (woman) striving, struggling, persevering and accomplishing. This kept me going.

Acknowledgments

Mahalo to my family, friends, colleagues and students. With your support, urging, and praise, I finished. To my parents, I thank for their patience and unending love. To my students, I especially thank. Getting to work with you on a daily basis afforded me the opportunity to serve my community. I got to see your struggles, perseverance and accomplishments. Knowing you all, has motivated me to keep going. There have been many days that I thought of quitting, but those thoughts were quickly dispelled when I thought of you all.

I dedicate this to my daughter Kielehiwalani. You're a blessing to me in many ways. This is just as much yours as mine, since I have been working on this for 10 of your 20 years. You have sacrificed time with me, endured my pain and struggles; yet, provided the strength for me to continue. I love you to the moon and back.

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Chapter 1: Introduction

Being from Hawai‘i and a part Hawaiian¹ female, I have always felt proud to be Hawaiian. I went to a school where we honored our identity and background by learning about our history, our people and our kingdom, preparing ourselves to contribute to the future of our lāhui, nation (Pukui & Elbert, 1986). I come from a family, who values education, working towards your goals, respecting yourself and others, as well as doing what is pono “right” (Pukui & Elbert, 1986). I am who I am, as a result of those factors combined. Currently, I play three primary roles in life, first as a mother, second as a counselor at Kapi‘olani Community College, and third as a student in the Department of Educational Psychology at the University of Hawai‘i at Mānoa. In all roles, I strive to be a strong, Hawaiian woman, serve as a role model and stay true to myself. Although, I had the privilege of growing up with a strong foundation, I still struggle with my identity and question my abilities, especially academically. As I go through this process, I doubt myself constantly. I see my colleagues, students and others in our lāhui, nation, wrestle with these same insecurities.

Over the years, I reflected on my own journey and observed many other Native Hawaiian students struggle to attend college, stay enrolled and graduate. I observed students who faced many challenges that influence their success in college, including financial and family support, college readiness, low self-efficacy and internal struggles around identity and what it means to “be Hawaiian.” Looking back at my educational journey, I reflected on an experience I had in graduate school, where I questioned my identity as a Hawaiian and graduate student. I remember being excited to take classes related to tests and measurements, while my peers dreaded them. I

¹ For the purpose of this study, Hawaiian and Native Hawaiian will be used interchangeably to mean any individual who is a descendant of the indigenous people, who inhabited Hawai‘i prior

had always been good at math, though I never shared my enthusiasm, fearing scrutiny from my peers. One term, I enrolled in tests and measurement and as the term progressed found myself doing well. I was shocked that I was doing well and was proud. The day after our midterm, I went to my instructor to ask about my grade. He responded, “Don’t worry. The hula girl got an A.” I left feeling proud. I got an “A!” Then I paused. What did he mean? Is the hula girl not supposed to get an “A?” Why was I labeled as a “hula girl?” I was a hula dancer but it’s not my only identity. I got an uneasy feeling in my stomach. I wasn’t mad, but more bewildered and confused. I started to question, maybe my roles as hula dancer and graduate student don’t mix? Can I be one without the other? Can I be both? It got me thinking about my abilities in both roles and question how they interacted. I was proud to be who I was, but it seemed like who I was, didn’t fit some kind of norm. I didn’t fit the norm. This internal conflict made me think about other students. If I felt this, did others feel the same way? Experiences like this drove me to keep going, persevere. I earned my counseling degree and am privileged to help Hawaiian students in my current role as a counselor and coordinator for a Native Hawaiian student success program at a local community college. It drove me to this current research, where I aim to answer some of the unanswered questions, related to psychosocial variables that affect Native Hawaiian students’ performance in community college.

Statement of the Problem

Historical influences on education. Hawaiian culture is founded in its oral traditions (Griener, 2007; Hishinuma, Andrade, Johnson, McArdle, Miyamoto, Nahulu, Makini, Yuen, Nishimura, McDermott, Waldron, Luke & Yates, 2000). Genealogies, stories and legends were passed down from generation to generation by oli (chants), mele (songs), and mo‘olelo (storytelling). Before European contact, the Hawaiian civilization was based on ahupua‘a a

complex human-in-ecological order of farming and fishing, operating collectively as a community and interactively with the environment (Pukui, Elbert, & Mookini, 1974)

After European contact in 1778, many Hawaiians were infected with foreign diseases and with little resistance to these diseases, the Native population decreased by more than half (Schmitt, 1968; Hishinuma et al., 2000). The population, pre-European contact, was estimated to be close to one million and decreased to 35,000 by 1893 (Schmitt, 1968). Stannard (1989) quoted King, who travelled to Hawai‘i with Captain James Cook, estimating the Hawaiian population at two points in time based purely on observation as 500,000 in 1779, and a few years later, as 400,000. Despite population decline, Hawaiians were introduced to the written word and had one of the highest literacy rates in the world (Benham & Heck, 1998). The Hawaiian Kingdom flourished with high literacy rates and learning or passing of ‘ike (knowledge) was passed from generation to generation orally or through practice. Through institutional and “formalized” education, Hawaiian children were forced to assimilate to Western methods, forbidden from speaking their language and practicing cultural traditions (Hishinuma et al., 2000). After the overthrow of the Hawaiian monarchy, the Kingdom of Hawai‘i was annexed by the United States and became a colony. From 1893 to statehood in 1959, the academic achievement of Hawaiians worsened (Hishinuma et al., 2000; Benham & Heck, 1998).

According to the U.S. Census, Native Hawaiian and other Pacific Islanders made up .4% (1,225,195) of the national population in 2010 (Humes, Jones, & Ramirez, 2011). More than half of those who identified as Native Hawaiian and other Pacific Islanders (685,182), identified as being more than one race. In 2010, Kamehameha Schools (2014) reported that there were 527,077 Hawaiians in the U.S., and of those, 289,970 lived in Hawai‘i.

There are strong arguments that the oppressive history of the Hawaiian people negatively impacted the cultural identity² and success of Hawaiians in education (Yamauchi, 2003). Hawaiians were expected to learn in an environment that was not natural to them, and reading, writing and learning mathematics in a Western education system was imposed and incongruent with their traditional ways of learning. The use of books and learning in a classroom setting negated the value of oral histories and hands-on learning (Schonleber, 2006; Greiner, 2007; Hishinuma et al., 2000; Kawakami, 1999). Barnard (2004) explained that Hawaiian students' low academic achievement was directly related to their feelings of alienation in the Western classroom setting, which differed drastically from the home environment, where learning was connected to relationships within the 'ohana (family), within a community and with the land. This mismatch contributed largely to the systematic underachievement of native children in academic settings. Hawaiians, experiencing a history of colonization, were categorized as "involuntary minorities" versus "voluntary minorities" (Ogbu & Simons, 1998). Voluntary minorities value cultural identity rooted in their homeland, and view education as a means to succeed in their newfound American society. On the contrary, "involuntary minorities" struggle to maintain their identity and connection to the land, which is dominated by another culture. The loss of language, culture and practices affected the collective efficacy of Native Hawaiians, who were expected to live and learn in the predominantly Western education system (Hishinuma et al., 2000).

At first glance the literature presents a dismal story. According to Yamauchi, Lau-Smith and Luning (2008), Hawaiian students scored lower on standardized measures of achievement and dropped out of school at higher rates, compared to other ethnic groups. At the same time,

² Cultural identity is usually structured around social constructs, such as gender, race and ethnicity (Holland, Skinner, Lachicotte, & Cain, 1998)

Hawaiians were overrepresented in special education and are less likely to enroll in post-secondary institutions, compared to other peers across the State (Kamehameha Schools, 2014). Kamehameha Schools (2014) reported that 14% of Native Hawaiian adults earned a bachelor degree or higher, compared to the average of all major ethnic groups in Hawai‘i, which was 30%, in 2009. Native Hawaiians comprise only 16.8% of the undergraduate population and 12.8% of the graduate or professional population in Hawai‘i, despite making up nearly a quarter (23.5%) of the overall population. In 2009, 25.7% of Native Hawaiian young adults (ages 18-24) were enrolled in a post-secondary education, compared to the overall State average of 35.7%. Chinese, Japanese, and Non-Hispanic White students enrolled at higher rates in higher education than the State mean, while 34.3% of Filipinos enrolled. More than a quarter of Native Hawaiian students (undergraduate, graduate or professional) worked full time over the course of their studies, 13% worked full time for part of the year and 42% worked part time.

In the literature, academic performance was typically measured by grades, grade point average (GPA), persistence, and transfer and graduation or degree completion rather than ‘ike, knowledge or practice. The statistics and demographics tell one story of Hawaiians in education. A counter-narrative shows Hawaiians as a nation of survivance and perseverance (Kaomea, 2014; 2015). Through excellence in reading and the writing, Hawaiians progressed through writing in nūpepa, newspaper in ‘ōlelo Hawai‘i (Polynesian, 1861). There were many nūpepa printed in ‘ōlelo Hawai‘i starting in 1845, including “The Polynesian” and “Ka Nūpepa Kuokoa.” Hawaiians were prolific songwriters, poets dancers, caretakers of the land and practitioners (Harden, 1999). What happened to change our people from prideful and accomplished to our current situation in which Hawaiian students perform lower, academically,

than all other major ethnic groups in Hawai‘i (Kamehameha Schools, 2014)? This question haunts me and drives me to further research this area.

Educational effects on well-being. How do the reciprocal relationships between low academic achievement, economic status and social, political and health disparities affect the wellbeing of Native Hawaiians? Native Hawaiians have the lowest average income compared to other major ethnic groups in Hawai‘i (Kamehameha Schools, 2014). They are less likely to have health insurance or seek health care due to cost and continue to have the highest rates of child abuse, suicide and arrests. In 2009, 57.7% of Native Hawaiian households earned a livable wage compared to 66.7% of the State’s general population (p. 59). Although the proportion of Native Hawaiians living in poverty has declined over the past 10 years, the percentage of Native Hawaiians surviving on less than a livable wage has increased. Kamehameha Schools (2014) reported that 81.5% of Native Hawaiian adults with graduate degrees earned a livable wage, in 2009. For Native Hawaiian adults with less than a high school diploma, 21.2% earned a livable wage (p. 61). Improvement in the academic achievement of Native Hawaiians may have a lasting effect on the overall well-being of the population.

The colonization of Hawai‘i had many long-term effects on the Hawaiian population, including education (Kaomea, 2014). There are many possible reasons for the low academic achievement of Native Hawaiians, as a whole. Some say that the loss of language and culture in the early 1900s, left our kūpuna (elders) with a sense of shame, which trickled down to later generations. The message that Hawaiians are “lazy” and “not good” in or belong in classrooms, lead to low academic self-efficacy, or belief in one’s ability to succeed in academic settings. Among the Hawaiian community, mixed messages were sent that education was important, while other values of “family first” or “Hawaiians’ work outside and with their hands” contributed to a

narrative that counters success in Western academic settings. The more one identified with being Hawaiian, the less likely one was to succeed. Kaomea (2014) revealed that the colonizers used education as a tool, aimed to “eliminate” or replace culture and connection to our culture. Regardless, it is clear that the colonization of Hawai‘i had negative effects on our lāhui in many ways.

As a part Hawaiian woman, I have a kuleana (right, privilege and responsibility) to our community. I am motivated to research and ho‘opono (make right) the effects of colonization, particularly in education, by adding to the body of research that improves education for Hawaiians.

Purpose of the Study

The purpose of this study is to explore the influence of self-efficacy and Hawaiian identity on the academic performance of first year Native Hawaiian community college students. For this research, Hawaiian identity is defined by group identification determined by scores on the Multigroup Ethnic Identity Measure (MEIM, Phinney, 1992) and the Hawaiian Culture Scale (HCS, Hishinuma, et al., 2000). The literature reveals the pervasive challenges of succeeding at a community college. There is also a body of research that aims to explain the relationship between identity, self-concept, self-efficacy and academic performance. However, there is little research addressing how Hawaiian identity and self-efficacy influence academic performance and ultimately degree attainment³. This research explored two social constructs, Hawaiian identity and academic self-efficacy and their influence on academic performance.

³ The awarding of a certificate or degree.

Theoretical Framework

Bandura's (1995 & 1997) Social Cognitive Theory emphasizes the importance of the construct of self-efficacy. Self-efficacy can be defined as individuals' beliefs in their capacities to perform certain tasks or behaviors. Self-efficacy reflects confidence in the ability to exert control over one's own motivation, behavior, and environment. Bandura explained that through mastery experiences and vicarious experiences, efficacy of an individual might increase. Mastery experiences happen when individuals experience success and create cognitive, behavioral and self-regulatory tools to complete tasks successfully. On the contrary, failed experiences decrease the efficacy of individuals to complete those tasks successfully in the future. "Successes build a sense of self-efficacy; failures weaken it" (Bandura, 1995, p.149). People doing well or observing others who are similar to them doing so, can raise their self-efficacy.

Bandura's (1997) model of reciprocal causation (see Figure 1) includes a triad of factors: environmental, behavioral and personal factors in the form of cognitive, affective and biological aspects. Bandura presented these factors as playing a bidirectional and interactive role in human agency. Social Cognitive Theory expands the notion of human agency to suggest the role of the environment and society on individuals and the importance of collective efficacy, as another attribute that emerges out of group factors that impact individuals (Bandura, 1997). Collective efficacy beliefs coupled with individual efficacy beliefs make "personal and social change complimentary" (Bandura, 1997, p. 7). I will use parts of the reciprocal causation model to frame this research (see Figure 1).

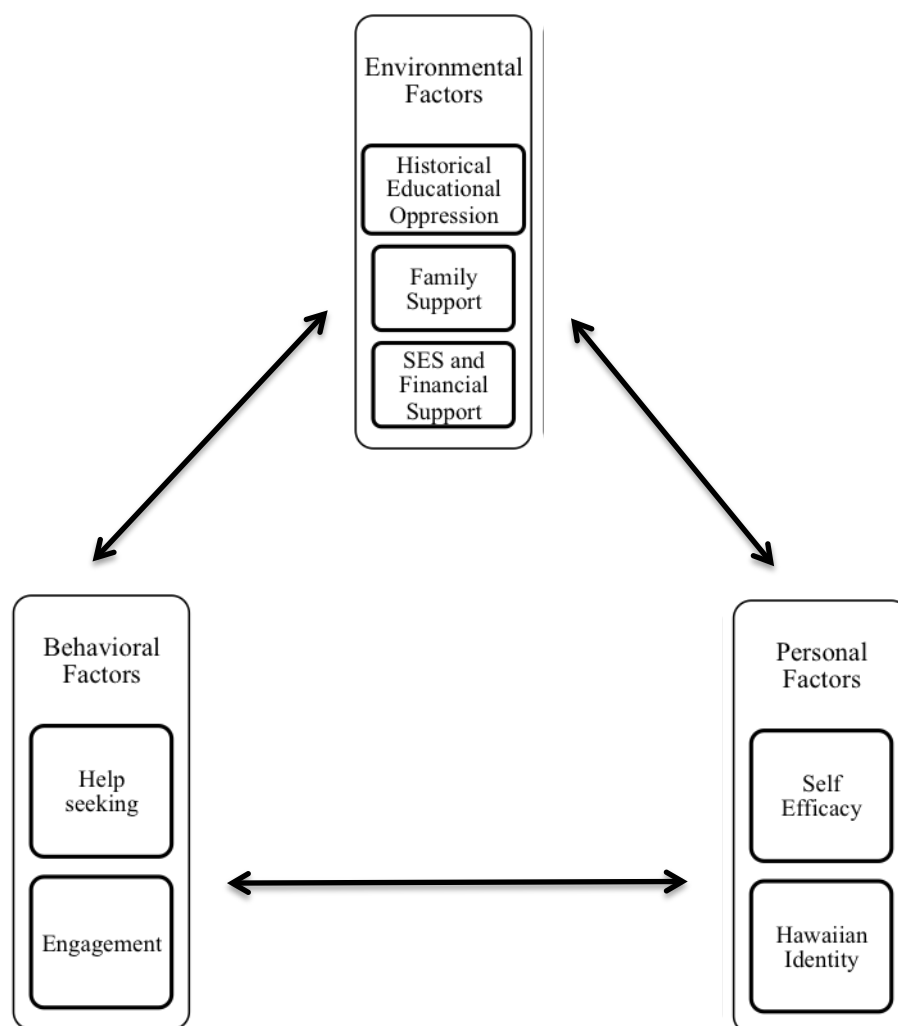


Figure 1. Triadic Reciprocal Causation (Bandura, 1986) with examples related to Native Hawaiian students' academic performance

Environmental factors. Environmental factors related to Native Hawaiian academic performance includes a mismatch between home and school, historical educational oppression and family and financial support (Kawakami, 1999; Hishinuma et al., 2000; Hagedorn, Lester, Moon, & Tibbetts, 2006). Missionaries trying to educate Native Hawaiians to be “less savage” first introduced “formal” education in Hawai‘i,” treating Hawaiians as inferior and incompetent (Meyer, 2003). The Hawaiian culture is often described as a collectivist culture, which may contribute a mismatch between Hawaiian culture and schools (Kawakami, 1999).

Family responsibilities and expectations, outside of school can be obstacle for students (Hagedorn, et al., 2006; Phinney, Dennis, & Osorio, 2006). While family responsibilities can negatively affect students' persistence in college, helping the family, especially for students from low socioeconomic (SES) status households, is the most frequently endorsed reason for attending college (Phinney et al., 2006). Socioeconomic status is a construct that defines an individual's status in society and can include income level, region, ethnicity, culture, parents' occupation and education level (Titus, 2006) and even family structure (Sinclair, Doughney & Palermo, 2002). Financial support, through scholarships and financial aid has been identified as one of the primary predictors of success for minority and Native Hawaiian students and can mitigate the effects of SES (Hagedorn, et al., 2006; Makuakane-Drechsel & Hagedorn, 2000).

Behavioral factors. Two behavioral factors that affect Native Hawaiian college degree attainment are “help seeking” and engagement in college (Astin, 1977; Hagedorn, et al., 2006; Hagedorn, Tibbetts, Lester, & Moon, 2003; Makuakane-Drechsel & Hagedorn, 2000). Community college students, particularly Native Hawaiians, often do not ask for help (Hagedorn et al., 2003). Astin (1977), explained that involvement on campus, through joining clubs, conducting research or living in dormitories, could influence commitment to college, which in turn affects students' persistence and achievement. Engagement in college activities has been shown to increase the likelihood of degree attainment in community college (Lotkowski, Robbins, & Noeth, 2004).

Personal factors. The third group of variables related to Native Hawaiian academic performance is the personal factors of self-efficacy and Hawaiian identity. This component is the focus of the current research. Hawaiians experienced historical trauma and oppression (environmental factors) that in turn influenced a low cultural efficacy for the population (Fong,

2012). As a whole, Native Hawaiian students do not have high levels of “efficacy” to succeed in school. Students’ identity as Hawaiians is tied to degree attainment (Hagedorn, et al., 2006), and a strong group membership can counteract the effects of stereotypes and strengthen academic motivation (Phinney, Dennis, & Osorio, 2006). However, researchers have not documented the relationship between Hawaiian identity and self-efficacy or the collective effects of these two concepts on academic performance.

Using reciprocal causation as the framework for this research, I focus on Bandura’s (1997) personal factors. I aimed to gain a deeper understanding of the relationship between the personal factors, self-efficacy and Hawaiian identity and their combined effects on academic performance.

Research Questions

The purpose of this research was to explore the influence of self-efficacy and Hawaiian identity on first year Native Hawaiian community college students. Based on a review of the literature and Bandura’s model of reciprocal causation (1995, 1997), I developed the following research questions and hypotheses to guide my research. See the hypothesized model for research questions 1-3 in Figure 2 and for research question 4 in Figure 3.

Research Question 1. What is the relationship between Hawaiian identity and self-efficacy among First Year Native Hawaiian community college students?

Hypothesis 1. There is a significant positive relationship between academic self-efficacy and Hawaiian identity.

Research Question 2. What is the influence of Hawaiian identity and self-efficacy on the academic performance of First Year Native Hawaiian community college students?

Hypothesis 2a. There is a significant positive effect of self-efficacy on academic performance.

Hypothesis 2b. There is a significant positive effect of Hawaiian identity on academic performance.

Research Question 3. What is the effect of Hawaiian identity and academic self-efficacy on academic performance in English, Math, Hawaiian studies and Hawaiian language classes?

Hypothesis 3. There is a significant positive relationship between Hawaiian identity on Hawaiian studies and Hawaiian language courses.

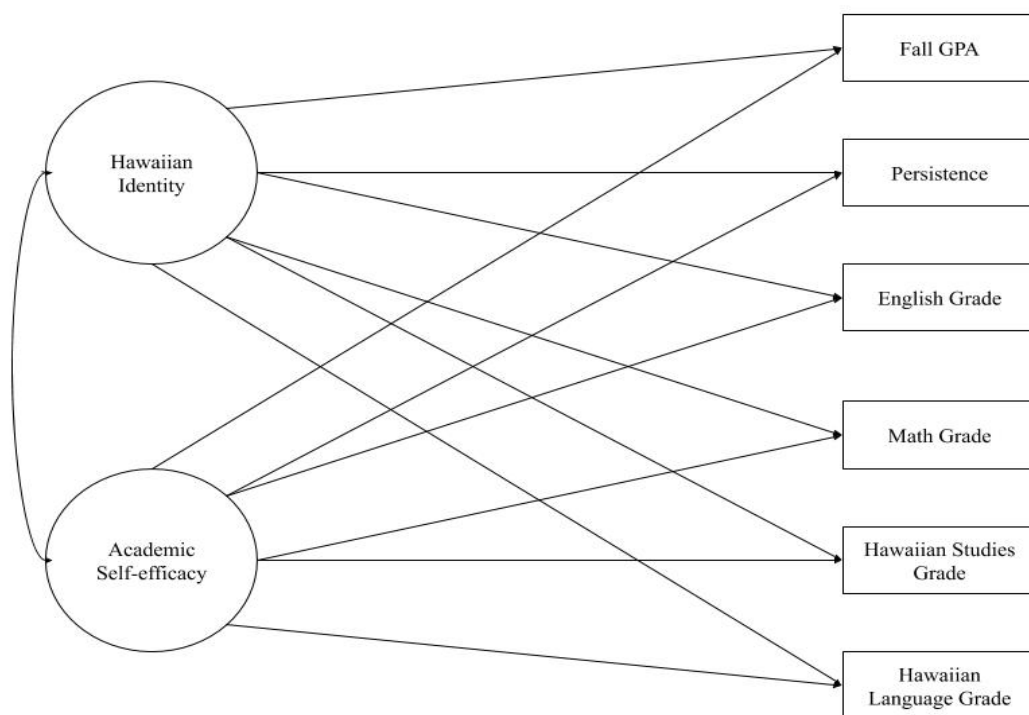


Figure 2. Hypothesized Model for Research Questions 1-3

Research Question 4. Is there a mediated effect of self-efficacy on the effects of Hawaiian identity on academic performance?

Hypothesis 4a. Self-efficacy as a mediator has a positive effect on the relationship between Hawaiian identity and Fall GPA and persistence from fall to spring semesters.

Hypothesis 4b. Self-efficacy as a mediator has a positive effect on the relationship between Hawaiian identity and end-of-term English, mathematics, Hawaiian studies or Hawaiian language course completion and grade.

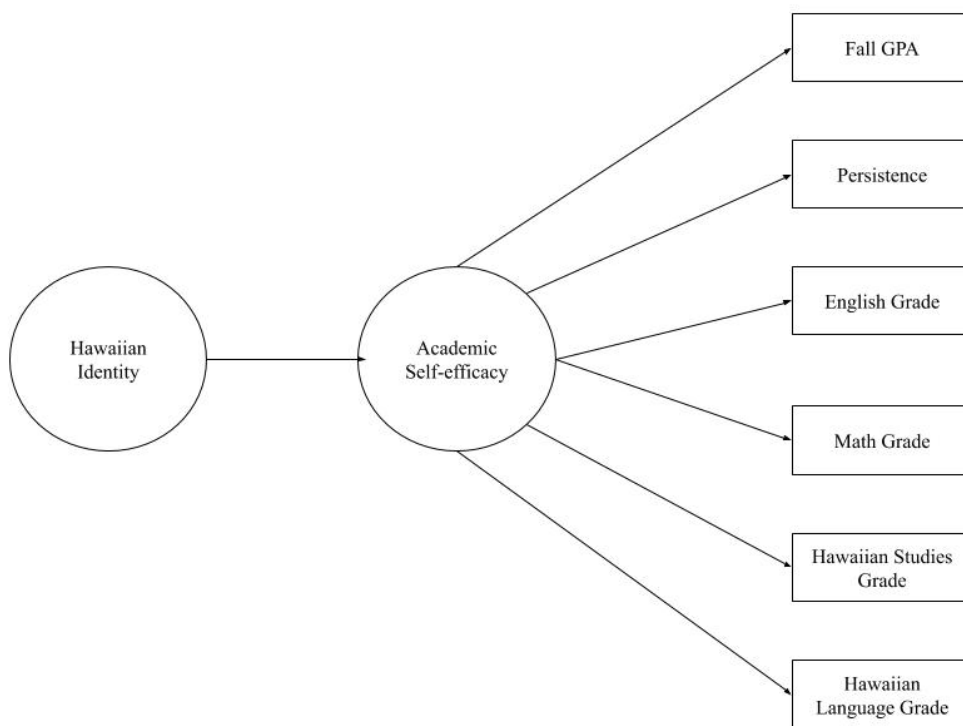


Figure 3. Hypothesized Model for Research Question 4

Significance of the Study

Although there has been some research examining variables that affect Native Hawaiian students in community college, more studies are needed. The following literature review identifies the variables that contribute to persistence and degree attainment for Hawaiian students (Makuakane- Drechsel & Hagedorn, 2000) and discusses how cultural identity affects different aspects of academic performance. My research focuses on questions left unanswered in the literature review. How are Hawaiian identity and self-efficacy related and how do those variables influence academic performance? By answering these questions, I hoped to provide answers that

can support the continued educational growth and success of the Hawaiian community. The answers can inform future plans to increase the success rates of Hawaiian students in college, ultimately lifting us out of poverty, health decline and homelessness. The research findings also inform other minority groups who struggle with the same challenges. Education can be the key out of oppression, only if we navigate a way through.

My Role as a Researcher

As is true for all research, my role engenders both advantages and disadvantages. As a Hawaiian, my investment in this research is driven by a passion to help my community. Seeing the dismal statistics of low academic achievement of Hawaiians in higher education often brings me to tears. Being a faculty member at the community college that is the site of this research could be viewed as a bias. However, my role as the Coordinator of the Kapo‘oloku Program for Native Hawaiian Student Success, provided opportunities to observe Native Hawaiian students on a daily basis. I feel my experiences positively affected the progress of the research as opposed to serving as a bias. As my newfound introduction to formal research and theoretical models drove me to further my research, my perspective allowed for an intimate approach that was aligned both culturally and theoretically. The ability to learn from students, understand their perspectives and struggles add strength to my position. I solicited participation and increased response rates through personal relationships, which is appropriate for this research, as relationship building is valued amongst the Hawaiian community. I networked in a culturally relevant and respectful way.

Chapter 2: Literature Review

This review of literature review examines existing research on the history and education for Hawaiians with emphasis on community colleges and first year students. The review focuses on education for and of indigenous populations, community college persistence and success, academic self-efficacy and identity, with attention to literature that explores the construct of Hawaiian identity.

Indigenous Populations and Education

Native American, Alaska Native and Native Hawaiian populations suffer a similar plight in education (Lopez, 2018; Sablan, 2019). These colonized groups experienced pervasive alienation from families and traditional ways of learning, and the elimination of language and culture was common (Barnard, 2004; Lopez, 2018). Through the 1800-1900's, the U.S. government administered American Indian Boarding schools (Birchard, 1970). They removed children from their homes and families, in attempts to assimilate them into the imposed American way of life. Likewise, schools in Hawai'i used boarding schools, such as the Royal School and the Kamehameha Schools to "educate" Hawaiians, and promote Christian teachings and vocational skills (Kaomea, 2014; Mitchell, 1993). Kamehameha Schools opened their Boys School in 1887 and their Girls School in 1894. The schools aimed to educate Native Hawaiian youth in military, trade and homemaking skills. Pictures of pupils at Kamehameha schools showed images of boys working and girls sewing, dressed in western clothing (Mitchell, 1993).

Kaomea (2014) explored the use of missionary-based education of our ali'i (royals) and its effects on procreation. Kaomea argued that the puritanical Christian education at Royal School of the Hawaiian ali'i lead to the elimination of the Hawaiian royal bloodline. Through education and discipline, missionaries taught the royal children that sexual activity and co-

sleeping were inappropriate and taboo. This countered the culturally acceptable practice of sexual activity as part of life and such experiences as enjoyable. Ultimately, there were no known surviving children of the ali'i. This research showed how the institution of education, used by colonizers, can have detrimental and lasting effects on native people.

University of Hawai'i System and the Education of Hawaiians

The University of Hawai'i (UH) was founded in 1907 with 10 students (University of Hawai'i, 2020). The first schools were agriculture and mechanical arts. In 1922, the first Hawaiian language class was taught by Frederick W. Beckley. Currently the University system, which includes the State's community colleges, enrolls nearly 50,000 students, with 23% being of Hawaiian ancestry (University of Hawai'i, 2020). There are both undergraduate and graduate degrees in Hawaiian language and Hawaiian studies. Despite Hawaiians making up nearly a quarter of the student body, only 8% of the faculty are Hawaiian. The University of Hawai'i system grew, through the founding of the community colleges in 1964, with four campuses, Kapi'olani, Honolulu, Maui and Kaua'i.

Since then, the system added three more community colleges and two more Universities, Hilo and West O'ahu and converted Maui Community College to Maui College in 2010. The six community colleges as a whole, enrolled 24,359 students in 2018 (Morton, 2018), nearly half of the UH enrollment. Community colleges play a vital role in post-secondary education in Hawai'i, allowing student access to education at a lower cost than their university counterparts. This is especially critical for Hawaiian students, who typically come from lower SES households (Kamehameha, 2014). Because of this, Hawaiian students enroll at the community colleges at higher rates than the four-year universities, making up 17% - 48% of their enrollment at various campuses (Morton, 2018). The UH community colleges support Native Hawaiian student

through development of support programs aimed to increase retention, persistence, graduation and transfer. The programs aim to promote Native Hawaiian student success through co-curricular and ‘āina based curriculum to address performance gaps (Hawai‘i papa o ke ao, 2020).

In 2012, the UH system created Hawai‘i Papa O Ke Ao to promote success for Native Hawaiian students across the system (Hawai‘i papa o ke ao, 2020). The initiative declared that the UH system is a “model indigenous serving institution,” encouraging Hawaiian language parity and increased numbers of Hawaiians in faculty and leadership roles. Despite the institution of Hawai‘i Papa O Ke Ao, there are still undercurrents of mistrust and misunderstanding of education for Hawaiians. This manifests in many forms, from the underrepresentation of Hawaiian faculty to the tensions between Hawaiian land usage and UH projects, such as the thirty-meter telescope on Mauna Kea (Bartels, 2020).

Community College Persistence and Success

Community colleges are the gateway to higher education for many students from lower socioeconomic (SES) backgrounds and those who are the first generation in their families to attend college (Makuakane-Drechsel & Hagedorn, 2000). In more recent decades, there has been more focus on the role of community colleges and their significance to higher education. The economic recession of the early 2010s and the focus on efficiency of community colleges increased the numbers of community college students. Historically, community colleges drew students from the lower socio-economic populations, with low tuition and open door admission policies (Complete College America, 2020). As the nation slowly climbed out of the recession, the enrollment at community colleges decreased (Morton, 2019). However, administrators and higher education analysts continued to expect increased numbers of enrollees, pushing for higher persistence and graduation rates.

For minorities, including Hawaiians, community colleges play an important role regarding access to higher education. In the University of Hawai‘i system, Hawaiian students enroll in community colleges at higher rates than the 4-year institutions. According to Complete College America (2019), only 4% of students completed an associate’s degree in two years, with 51.7% enrolling in remediation. At 2-year colleges, only 29% of students were “full time,” enrolling in 15 or more credits each semester. Overall, community or 2-year college success rates are lower than their 4-year counterparts, and for minority students, this is particularly true. Students from minority backgrounds who enrolled in community colleges had lower success rates, i.e., persistence and graduation rates, than their Caucasian counterparts (Mickelson, 1990). Although Hawaiian students made up 17% of community college enrollment in the University of Hawai‘i, community college system in 2003, more than 65% dropped out in a 3-year timeframe (Hagedorn et al., 2006). Most minority students started their college career taking remedial or developmental classes, setting them back from the start. National initiatives such as Achieving the Dream and Complete College America pushed for more research and intervention in this area (Achieving the Dream, 2017).

There are many variables that affect the low enrollment and degree completion of minority students. Minority students attended college for different reasons than European American students. They enrolled to help their families and placed more importance on motivation from their families (Phinney, Dennis, & Osorio, 2006). Harbour, Middleton, Lewis, and Anderson (2003) suggested that minority college students lacked “dominant culture privilege” (p. 831), which is explained as the privilege an individual native to the dominant culture has in a system such as employment or higher education. Students from families with low-incomes had higher dropout rates and earned college degrees at lower rates (Titus, 2006).

Other variables that predicted students' college success were socioeconomic status (SES), high school GPA, family support, English language use, being the first generation in college and access to financial support (Makuakane-Drechsel & Hagedorn, 2000; Huerta, Garza & Garcia, 2019).

Many studies explored minorities including "language minority students" enrolled in community colleges (Huerta et al., 2019). Like Hawaiians, language minority students enrolled in community colleges at higher rates, were underrepresented and had similar outcomes of lower re-enrollment, completion and graduation. Since minority students may lack "dominant culture privilege" in post-secondary educational institutions, researchers explored and some have identified strategies that promote success and degree completion. The research suggested that relationship building, understanding students' motivation for being in school and financial support positively influenced success. More specifically, positive student-to-faculty interactions, increased mentorship, and family support and participation in academics and "giving back" to the community contributed to postsecondary persistence among American Indian and Alaska Native students (Lopez, 2018; Reyes, 2019).

The research for Native Hawaiian students in community college was similar to that of other minorities. Among Hawaiians, high school GPA (representing academic preparedness) and financial aid strongly predicted 4-year degree attainment (Hagedorn et al., 2006). For community college students, low SES, lack of family support, non-continuous enrollment and proficiency in Hawaiian language decreased the likelihood of bachelor degree attainment (Hagedorn et al., 2006). Whereas, completing a bachelor's degree, while being married, sense of belonging to the Hawaiian culture, family proficiency in Hawaiian language and financial aid increased the likelihood of bachelor's degree attainment. Makuakane-Drechsel and Hagedorn (2000) found

that full-time enrollment, average credit hours taken, previous experience at a 4-year institution and location of students' high school were variables related to Native Hawaiians students' persistence in community college. One of the strongest predictors of persistence was receipt of financial aid (Hagedorn, et al., 2006). Receiving financial assistance from the federal or state government or community organizations helped offset the effects of lower SES.

Academic Self-Efficacy

Self-efficacy can be defined as an individuals' beliefs in their capacities to perform certain tasks or behaviors (Bandura, 1995, 1997). Self-efficacy reflects confidence in the ability to exert control over one's own motivation, behavior, and social environment. Self-efficacy is a sociocultural construct that is related to academic performance, health behaviors and other changes in mindset that affect behaviors (Chun & Dickson, 2011; Luszczynska, Scholz & Schwarzer, 2005; Cordova, Sinatra, Jones, Taasobshirazi, & Lombardi, 2014).

Chun and Dickson (2011) reported that for middle school Hispanic children, academic self-efficacy had the greatest positive significant direct effect on academic performance, such that culturally responsive teaching had a negative significant effect and parental involvement and school belonging had no significant effect. However, parental involvement and culturally responsive teaching had positive significant effects on academic performance when mediated by academic self-efficacy. Choi (2005) further supported the claim that self-efficacy is measured more effectively when it is domain specific. In looking at three self-efficacy measures to predict college students' academic performance, Choi found that general efficacy did not significantly contribute to the amount of variance explained in achievement. Domain specific efficacy was a stronger predictor compared to academic self-efficacy for term grades. Abd-Elmotaleb and Saha (2013) explored the relationship between academic self-efficacy, academic climate and academic

performance and found that academic self-efficacy had a strong positive relationship with academic performance for “theoretical faculties” defined as commerce, law and education, more than on “practical faculties” of engineering, pharmacy and computer science. They further suggested that students with a high sense of efficacy were better able to perform or accept challenging tasks, being more flexible, less anxious, and more capable of managing time and obstacles.

In reviewing the literature, I found studies that validated academic self-efficacy scales and some that measured different domains and their relationship with academic performance. Barry and Finney (2009) used the College Self-Efficacy inventory (CSEI) to measure college self-efficacy on three domains: course, social and roommates and tested four models to validate the CSEI. They found that the course, social and roommate domains were reliable with Cronbach alpha .89, .90 and .82 respectively and found significant correlations for the course and social domains with GPA, while the roommates domain did not have a significant correlation with GPA.

Pajares and Miller (1994) and Pajares and Johnson (1995) studied domain specific efficacy in math and English, respectively, and found significant relationships between efficacy in each area and performances in respective areas. Chemurs, Hu and Garcia (2001) studied first year college students and confirmed a positive significant effect of academic self-efficacy directly on academic performance and mediated through academic expectations.

Owen and Froman (1988) focused on the development and effectiveness of a scale to measure academic self-efficacy for college students, College Academic Self-Efficacy Scale (CASES). They considered the previous literature by Bandura (1984), Wood and Locke (1987) and Cervone (1987) who studied magnitude and strength of the scales, promoting the use of both

magnitude and strength. Other researchers found Likert type self-efficacy scales to be inconsistent measures (Newman & Goldfried, 1987; Maddux, Norton & Stoltenberg, 1986; Ladd & Price, 1986), while Owen and Froman (1988) proposed a simpler Likert scale to test reliability of the CASES. They confirmed test reliability over time and a clear three factor structure: (a) overt, social situations, (b) cognitive operations, and (c) technical skills.

In sum, there is a large body of research studying self-efficacy and academic performance. These studies show a consistent and significant relationship between these two constructs.

Identity

The concept of “identity” developed through the study of psychology, sociology, anthropology and social psychology (Holland, Skinner, Lachicotte, & Cain, 1998). A sociocultural approach to identity incorporates ideas from Vygotsky (1978) and Bakhtin (1981), such that cultural identity can be structured around social constructs that include gender, race and ethnicity. Erikson (1968), Phinney (1989, 1990, 1992, 1996, 1999 & 2007), Marcia (1966; 1980) and Waterman (1985) examined identity development. Erikson (1968) identified stages of development and categorized individuals’ development as “foreclosed” if there was little to no exploration of options. He described a “moratorium” as individuals being in the process of exploration. Identity was “achieved” when individuals explored, and then made a clear commitment to their own identities. Marcia (1966; 1980) identified development practically as exploration versus commitment, through his stages of ego identity development, aligning his stages to Erikson’s ideas. Phinney (1996) pointed out that ethnic identity labels could be problematic since individuals identify with and define membership with ethnic groups in different ways. The use of ethnic labels to describe culture is also problematic for the same

reasons. Ethnic identity is a multidimensional and complex construct (Phinney, 1996). In 1996, Phinney used ethnic identity interchangeably to describe both racial and ethnic identity, which is based on the groups to which an individual belongs. In 2007, Phinney and Ong further clarified the distinction of ethnic identity, stating that ethnic identity includes knowledge of and understanding of the group to which they belong and derives from experiences with individual's actions and choices, which is distinguished from racial identity.

Phinney (1989 & 1990) studied ethnic identity and its stages in adolescents and college students across ethnic groups, including Hispanics and Asian, African, and European Americans. Amongst tenth graders, there were no differences in the distribution of each ethnic group across stages of identity development. Approximately 50% were in the “diffuse/foreclosure” stage, while 25% each were in “moratorium” and “achieved” stages (Phinney, 1989). In 1990, Phinney and Alipuria measured ethnic identity search (6 items) and commitment (4 items) across college students from different ethnic group college students and compared their ethnic identity stages areas such as sex role, political, and occupational identity. Results revealed that minority students had stronger ethnic identities than White students; however, Asian Americans differed from Black and Mexican-Americans with lower correlations between self-esteem and having completed an ethnic identity moratorium (Phinney, 1990).

Phinney (1992) developed her Multigroup Ethnic Identity Measure (MEIM) to measure exploration identity and commitment. She tested the MEIM among high school and college students from various ethnic groups and found the scale more reliable among college students than high school students, with reported Cronbach alpha of .90 and .82 respectively. Phinney (1992) suggested that ethnic identity was “consolidated” (p.170) with age.

Hawaiian Identity. As a result of Hawai‘i’s economic and political history, a majority (73%) of Hawaiians identified as multiracial (Kamehameha Schools, 2014). Most Hawaiians are not 100% or “pure” Hawaiian, rather multiracial. In cases where individuals must choose one answer to identify themselves, analyzing data can be problematic, since a majority of Hawaiians are counted as “other” (Borrero, Yeh, Cruz and Suda, 2012) or “two or more races.” Additionally, the controversies about who counts as a “real Hawaiian” (Holt, 1974), and what constitutes a person being “Hawaiian enough” (Ledward, 2007) continues. Holt (1974), Kana‘iaupuni (2004), Kauanui (2008), Ledward (2007) and Osorio (2001) discussed the complex construct that make up Hawaiian identity, exploring race, ethnicity, phenotypes, ancestry and blood quantum.

Holt (1974) shared his personal experiences as a part-Hawaiian growing up in a “bicultural” household. He presented typical stereotypes, at that time, of Hawaiians “not caring”, being poor, “cynical” and not able to “make it” (p. 8). He specifically stated that he is Hawaiian in sentiment being “governed in my feelings as a Hawaiian ideal, an image, a collection of feelings fused by the connecting links of elements that go deep into the past” (p.13), as opposed to being Hawaiian politically or nationally since there was no longer a nation. Holt described the ancestral wisdom of Hawaiians, his own upbringing as both American and Hawaiian, and his resolution to maintain his own “bi-cultural” identity and deep pride in being Hawaiian.

Kauanui (2008) provided a clear historical overview of the laws and legal identification of Hawaiians as Kānaka Maoli (Native Hawaiians) by settler colonizers⁴ that maintained racial identification and blood quantum definitions. “The definition of Hawaiian identity on the basis of blood logistics was an American concept, a colonial policy developed through experience with

⁴ Settler colonizers defined as a settler population that replaces the local or indigenous population (Wolfe, 2006).

American Indians” (Kauanui, 2002, p. 110). Osorio (2001) presented the mo‘olelo and history of Hawaiians arguing against definitions and laws that use blood quantum to identify Native Hawaiians, stating,

Hawaiians are thus defined by ancestry, which is important to identity. For if being a descendant of a Native makes one Native, what if anything does blood quantum have to do with who we are? Does the *dilution* of Hawaiian ancestry in any significant way change the ethnicity of the individual? (p. 361)

Ledward (2007) further countered the “American ideology of race” (p.137) by phenotypes and color. He emphasized that Hawaiians instead emphasized rank, ancestry, birthplace and ability. Ledward examined the imposed racial and phenotypical definitions of “Hawaiianess” and their long-term harmful effects on the lāhui (nation). He reviewed historical definitions including associations of Hawaiians with Blacks in 1983 and the continued perceptions of equating “purity” of blood to lack of assimilation. Ledward found that Hawaiians internalized consistent narratives to classify themselves as individuals who could be “not Hawaiian enough for some Hawaiians” and “a mouthpiece for all Hawaiian people” at the same time (p. 133). Regardless of the how a Hawaiian looks, “brown” or “pale,” a set of standards governs their “Hawaiianess.” This continued use of racialization, judging Hawaiians by color, perpetuates fragmentation in our lāhui (Ledward, 2007; Wright 2003). The recognition and awareness of this American ideology is imperative to strengthen Hawaiians, individually and collectively.

Wright (2003) studied identification of Hawaiian membership for Hawaiian students in higher education settings. Unlike the Ledward’s focus on race and genotypes, Wright explored characteristics and values that were shared. She found clear distinctions between “local” and

“Hawaiian,” identities such that there were similarities, but the two descriptors were not exclusive. Wright revealed distinct Hawaiian group membership to be centered on genealogy, SES and values of ‘āina, ‘ohana or familial relationships and responsibilities and practice of the arts, such as crafts and hula. Although participants were multi-cultural, as many modern Hawaiians are, the values of knowing your genealogy, importance of family and practice of crafts emerged for those who identified as Hawaiian.

Borrero and colleagues (2012) described the multiracial state of Hawaiians as “racial ambiguity” (p. 4), defined as a space between racial and cultural identity that could be unstable. Borrero and colleagues studied the concept of “othering,” which is the action by which people place individuals into an “other” category. This forces a group identity upon individuals that is not a part of the norm, denying multiethnic identity and minimizing senses of belonging.

The Hawaiian community is challenged by how to identify culturally and ethnically. “Othering,” “being Hawaiian enough” and self-policing of “what it means to be Hawaiian” remain problematic.

Hawaiian Identity and Academic Success

Ogbu (1987) developed a complex cultural-ecological theory of minority school performance and classified minorities as being voluntary or involuntary. Voluntary minorities were defined as groups that have made the choice to immigrate to another place with intentions of betterment. Involuntary minorities were defined as groups that were in some way “forced” to become a part of the “settler” (p.162) or dominant society. Ogbu’s theory classifies Native Hawaiians as involuntary minorities because they were colonized into the U.S. rather than immigrating by choice. Involuntary minorities and voluntary minorities have different views of school. The comparison between involuntary minorities and voluntary minorities is not the focus

here, rather the identification of beliefs and behaviors that affect involuntary minorities and their view of school success. According to Ogbu and Simons (1998), involuntary minorities make negative comparisons to the White middle class, and have an ambivalent view of school success, valuing it while at the same time comparing the idea of it to realistic experiences of wage indifference and discrimination in the workplace. They also have a mistrust of institutions, based on historical discrimination and racism. Ogbu and Simons further explained that for involuntary minorities, the act of “symbolic adaptation” or the perceived need to be proficient in White culture and language is necessary to make up for learning differences. However, involuntary minorities find this difficult for two reasons. The first is that the requirements for learning the White culture and language are imposed by White Americans and second, cultural and language differences are interpreted as markers of identity, which should be maintained rather than overcome.

This conflict continues in regards to parents’ and communities’ attitudes about school. Involuntary minorities often, abstractly, endorse school and the importance of learning, while conveying messages that they mistrust schools and blame teachers and pedagogies when children do not perform well (Ogbu & Simons, 1998). The reluctance to cross the cultural boundaries can be explained as an identity that opposes the White mainstream society or “oppositional identity” (p. 180). Oppositional identity strengthens the ambivalence that learning English, and exhibiting “good” school behaviors implies abandoning minority identities and assimilating. Therefore, involuntary minorities hold two sets of beliefs around what is expected. They need to learn the “White talk” and maintain their own culture and language to maintain their collective, minority identity.

Kawakami (1999) furthers Ogbu's (1987) model identifying the "cultural difference model" (p. 23) as a mismatch between school and home. She compared Hawaiian values with Western education and identified the mismatch as a primary reason for the historical underperformance of Hawaiian youth in public education. Kawakami surmised that the difference in values, beliefs and behaviors of school personnel and students accounted for the underachievement, and posited that Hawaiian students learn better in a culturally congruent environment through hands-on activities. Contrarily, there was a relationship between strong ethnic identity, among Black and Jewish adolescents and high school educational attainment that was based on the notion that being strongly connected to one's ethnic group, minimizes the effects of stereotypes (Phinney, Dennis, & Osorio, 2006).

Study of other involuntary minorities, African American and non-immigrant Mexican American college students, can give us insight into the relationship between identity and achievement. Little research has been done on the relationship between ethnic identity and academic achievement specific to Native Hawaiians. Phinney, Dennis and Osorio (2006) studied the differences between Latinos, Asian Americans, African Americans and European Americans, regarding their reasons for attending college. Understanding the reasons for attending college can help to clarify the reasons why students drop out. While Phinney and colleagues found that helping family, proving worth and encouragement from others were the most important reasons that minority students attended college, career and personal motivation were the most important to all groups. Previous research showed that students from lower SES households valued higher education because of their future plans to help their families financially; however, Phinney and others found that even for students from minority families with higher SES, motivation to help their families was strong. Socioeconomic status was the most important reason to attend college

across all groups. Phinney et al. (2006) concluded that students from ethnic minorities placed importance on dispelling negative stereotypes that were related to their abilities, and they promoted family values and expectations above individual goals.

Takayama and Ledward (2009) studied the effects of “culture-based” instruction on ethnic identity, self-esteem and self-efficacy of Hawaiian middle and high school students. Their findings revealed that there was a positive relationship between Hawaiian culture-based instruction and ethnic identity. However, there was no relationship between Hawaiian culture-based instruction and self-esteem or self-efficacy. Takayama and Ledward did not examine the relationship between self-efficacy and ethnic identity, which is the focus of the current research.

Self-Efficacy and Identity

A handful of researchers attempted to examine the relationships between self-esteem and identity (Alessandria & Nelson, 2005; Choi, 2005; Okech & Harrington, 2002; Takayama & Ledward, 2009), with some looking at self-efficacy as defined by Bandura. Alessandria and Nelson (2005) studied the differences between first generation American and non-first generation students in regards to self-esteem and identity development. They found that first generation students had significantly higher scores in self-esteem than their non-first generation counterparts. Choi (2004) studied general, academic and specific self-efficacy and sex role identity. She found that masculine sex group identity and general self-efficacy accounted for 30% of the variance, with femininity sharing 5%. When looking at course-specific efficacy, the difference in variance was not significant. Choi posited that general efficacy was related to personality traits.

Okech and Harrington (2002) explored the relationship between “Black consciousness ...an individual’s beliefs or attitudes about his or her self, own race, and the White majority vis-

a-vis the “Black experience” (p. 214), self-esteem and academic self-efficacy. They confirmed the hypothesis that African American males with higher Black consciousness had higher academic self-efficacy and found no relationship between academic self-efficacy and self-esteem. They concluded that efforts to increase self-esteem did not improve academic performance and more attention should be paid towards increasing academic self-efficacy.

Summary

This review revealed a large body of work on self-efficacy and its relationship with academic performance, ethnic identity. There is a mounting body of research around understanding and improving of education for all minorities. Some authors revealed connections between ethnic identity and self-efficacy (Chun & Dickson, 2011; Okech & Harrington, 2002), others confirmed the benefits and challenges tied to family values and expectations (Ogbu & Simons, 1998), while others confirmed findings that SES is the strongest factor contributing to college success (Kawakami, 1999; Hishinuma et al., 2000; Hagedorn et al., 2006). There are a handful of researchers who focused specifically on the Native Hawaiians, seeking to answer questions about ethnic identity, self-efficacy and other more common predictors of college success such as high school GPA, standardized tests and SES (Takayama & Ledward, 2009; Makuakane-Drechsel & Hagedorn, 2000).

Chapter 3: Method

Participants

Participants included 105 first year Native Hawaiian students starting at Kapi‘olani Community College (KapCC) in the fall 2018. There were 70 female and 35 males in the sample. The majority of the participants, 77 (73.3%) were between the ages of 18-29 and 21(20.0%) were under 18, typical of first year students. Six (5.7%) students who were between the ages of 30-44 and one (1.0%) who was between 45-59 years old represented the others. Because the research took place at a community college, variation of age outside of the typical age is expected (University of Hawai‘i Community College, 2018). A majority of the participants, 92 (87.6%) earned a high school diploma or GED. The highest level of education for the remaining 13 (12.4%) participants was “primary school” (1), and “some college, but no degree” (12). Students who had some college but no degree could include those who participated in the “early college” initiatives, allowing high school students take college classes on their high school campus.

KapCC is one of the four community colleges on the island of O‘ahu. The target population was first year Native Hawaiian students starting at KapCC in the fall 2018 semester. Native Hawaiian students were defined by students’ self-report of being “Hawaiian” or “part Hawaiian” on at least one of two questions on the admissions application, “ethnicity” and “legacy.” The “ethnicity” question asked students to “select one or more of the following races” from a list of ethnicities. The “legacy” question asked applicants to check “yes” or “no” for the question “Were any of your ancestors Hawaiian?” First year was defined as students attending college for the first time. Transfer students were excluded since they had previous college experience. Based on previous fall semesters, I estimated that there would be 300 students First

Year students entering KapCC in fall 2018. I invited first year students to participate in the study through a survey at the New Student Orientation (NSO) sessions and through email. There were a total of 140 responses between August 5, 2018 and September 12, 2018. There were no incentives given for participation.

Of the 140 responses, eight participants answered “No” to having Hawaiian Ancestry. These students were thanked and did not complete the survey. Of the remaining 132 respondents, I excluded students who were not attending Kapi‘olani Community College or did not fit “First Year” student definition. In order to eliminate the duplicate responses, the most recent submission or most complete submissions were kept. After these exclusions, 113 participants remained. Of these 113 respondents, 105 (92.9%) enrolled at Kapi‘olani community College in the fall 2018 semester. The discrepancy between the 113, survey completers and the 105 who enrolled was not expected. Students attending the New Student Orientation, which takes place one week prior to classes starting, typically register and attend college. This indicates that eight students (7.1%) did not enroll, perhaps suggesting barriers between the new student orientation and first day of school.

Instruments

Hawaiian identity. I used the Multigroup Ethnic Identity Measure (MEIM, Phinney, 1992) and the Hawaiian Culture Scale (HCS, Hishinuma et al., 2000) to measure Hawaiian identity. I chose to use two scales because Phinney (1996) suggested defining ethnicity through multiple variables. Phinney and Ong (2007) validated the MEIM for two ethnic identity factors, “exploration” and “commitment” and suggested adding other measures of “group-specific values, attitudes and behaviors” (p. 279) to better understand the group being studied. In this study, the MEIM was used to measure ethnic identity as defined by Phinney (1996; 2007) and

the HCS was used to measure values, attitudes and behaviors (Hishinuma et al., 2000). The MEIM has been studied frequently (Phinney, 1989, 1990, 1992, 1996, 2007; Phinney & Alipuria, 1992; Phinney & Dennis, 2006; Phinney & Ong, 2007), while the HCS was developed and used for a targeted population in Hawai‘i by Hishinuma and colleagues (2000).

Multigroup Ethnic Identity Measure. The MEIM was designed to measure general identity across groups, regardless of their unique histories and cultures, by measuring sense of identification or belonging to a group (Phinney, 1992). The MEIM is rated on a 5-point Likert-type scale, ranging from *strongly disagree* to *strongly agree* (Phinney, 1992). Sample items include: “I have a clear sense of my ethnic background and what it means to me” and “I have a lot of pride in my ethnic group and its accomplishments.”

According to Avery, Tonidandel, Thomas, Johnson and Mack (2007), the MEIM has two subscales, one for ethnic identity, which includes affirmation, belonging and exploration and one for “other group orientation.” For this study, I used the 12 items from the ethnic identity subscale. See MEIM items in Appendix A. Roberts, Phinney, Masse, Chen, Roberts, and Romero (1999) tested the 12-item ethnic identity MEIM scale among adolescents from diverse groups and found that the reliability across ethnic groups was higher than .80.

I provided the following prompt to solicit responses for the items. “These questions are about your Hawaiian ethnicity or your ethnic group (Hawaiian) and how you feel about it or react to it. Rate your agreement or disagreement with the following statements below.”

1. I have a clear sense of my ethnic identity and what it means to me.
2. I have a lot of pride in my ethnic group and its accomplishments
3. I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.

4. I am active in organizations or social groups that include mostly members of my own ethnic group.
5. I think a lot about how my life will be affected by my ethnic group membership.
6. I am happy that I am a member of the group I belong to.
7. I have a strong sense of belonging to my own ethnic group.
8. I understand pretty well what my ethnic group membership means to me.
9. In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.
10. I participate in cultural practices of my own group, such as special food, music, or customs.
11. I feel a strong attachment towards my own ethnic group.
12. I feel good about my cultural or ethnic background. (Avery et al., 2007)

Hawaiian Culture Scale. To measure Hawaiian identity, I used items from the adolescent version of the HCS (Hishinuma et al., 2000). The HCS was designed to measure a shared set of values, beliefs, behaviors and common ancestry (Hishinuma et al., 2000). The HCS has a total of 50 items, eleven “non-subscale” items and 39 items that are part of seven subscales. To view the complete HCS, see Appendix B. Hishinuma and colleagues tested the internal consistency of the HCS Adolescent Subscales and found the Cronbach alpha ranged from .82 to .96 for Hawaiian participants. The correlation coefficients between the non-subscale items and the overall subscale items were significant at the $p < .0001$, with the exception of the item “value non-Hawaiian beliefs,” which had a $p < .05$ significance (Hishinuma et al., 2000). For this research, I used the 11 “non-subscale” items. Removal of the subscale items was justified by the high correlation between these items, making the non-subscale items an acceptable measure for this construct. Eight of the ten items required response on a 5-point

Likert type scale. Items 1-3 and 8-10 scaled items from 1, “not at all” to 5, “very much.” Items 4-5 were open choice, provided specific options as a response. Items 6-7 scaled items from 1, “not at all” to 5, “excellent.”

For the items I used, participants read, “We would like you to answer the following items on Native Hawaiian culture and ethnicity.”

1. I learned about the Native Hawaiian way of life from my family at home.
2. I learned about the Native Hawaiian way of life from school.
3. I learned about the Native Hawaiian way of life from friends and neighbors.
4. Check anyone in your household who can carry a conversation in Hawaiian:
 - Yourself
 - Mother (primary female caregiver)
 - Father (primary male caregiver)
 - Grandmother
 - Grandfather
 - Other _____ (specify)
 - None
5. What language is primarily spoken in your home?
 - Standard English
 - Pidgin English
 - Hawaiian
 - Other _____ (specify)
6. Rate your ability to understand the Hawaiian language.
7. Rate your ability to speak the Hawaiian language.

8. How much do you value Hawaiian beliefs, behaviors and attitudes?
9. How much do you value non-Hawaiian beliefs, behaviors and attitudes?
10. How important is it to you to maintain Hawaiian cultural traditions?

Academic Self-Efficacy.

College Academic Self-Efficacy Scale. Owen and Fromen (1988) developed a 33-item CASES that asked for responses on a 5-point Likert type scale. They confirmed test reliability over time and found a clear three factor structure: (a) overt, social situations, (b) cognitive operations, and (c) technical skills. Over an 8-week test, re-test interval, the Cronbach alphas were .90 and .92 respectively. Choi (2005) used the CASES to examine self-efficacy and self-concept as predictors for academic performance and found the reliability coefficient of six items from the CASES within that study was .92.

For this study, I adapted CASES for 16-items for ease of completion. Items that were relevant to the community college population were identified and kept, while items related to campus housing and school policy items were removed. Additionally, I changed some terms and vocabulary to be simple for ease of understanding. Participants were asked, “How much confidence do you have about doing each of the behaviors listed below?” The 5-point scale measured confidence level from 1, “very little” to 5, “quite a lot.” The measured behaviors were:

1. Taking well organized notes during a lecture.
2. Reading and understanding textbooks or class material.
3. Managing time efficiently for learning.
4. Comprehending the meaning of what I study.
5. Completing my homework or daily assignments on time.

6. Completing papers or essays.
7. Using technology tools to learn.
8. Setting short-term goals for my study.
9. Setting long-term goals for my study.
10. Taking comprehensive or cumulative exams.
11. Remembering what I have learned.
12. Taking pop quizzes.
13. Participating in class discussion.
14. Answering questions in a large class.
15. Making up class work if I miss class
16. Talking to teachers or instructors when I need help

Observed academic performance variables. Academic performance was measured by final course grades in specified subjects, GPA and persistence. The observed outcome variables were: (a) academic performance measured by GPA at the end of fall 2018 (FGPA); (b) persistence (PER) or re-enrollment from fall 2018 to spring 2019; (c) grade in English class (ENG); (d) grade in math class (MATH); (e) grade in Hawaiian language class (HAW) and (f) grade in Hawaiian studies class (HWST). Historical and current system data revealed that pass rates for classes, influencing GPA and persistence across semesters was lower among Hawaiian students compared to all enrolled at KapCC (University of Hawai'i Community College, 2018).

Procedures

I collected the self-reported data that included gender, address, and items measuring academic self-efficacy and Hawaiian identity using an online survey for approximately one month, August 14, 2018 to September 12, 2018. During the new student orientation, First Year

Experience and Kapo‘oloku Program for Native Hawaiian Student Success staff provided a link of the survey to potential participants. Additionally, an email was sent to all First-Year Native Hawaiian students by the First Year Experience program to solicit participation. The consent and survey are included in Appendix C. Students who chose to complete the survey provided informed consent, prior to answering the survey questions. Participants gave consent to access their course grades and GPA by agreeing to participate. Once participants completed the online survey, I assigned them an ID number linked to their college ID number to protect anonymity.

I collected the course grades and participants’ GPAs at the end of the fall 2018 and spring 2019 semesters, approximately two weeks after grades were due. I accessed this data from the University of Hawai‘i system STAR academic system.

Data Analysis

In the current research, both factor analysis (FA) and structural equation modeling (SEM) were used to analyze the data. As the constructs of my primary research interest are Hawaiian identity and academic self-efficacy, they usually are modeled as latent variables that are not directly observed and are measured commonly through scales, surveys or inferred through observations. Observed variables, which are often referred to as indicators or measures in a test or measurement instrument, are used to define a construct or latent variable. Given that the two instruments for Hawaiian identity and academic self-efficacy, MEIM and CASES, have not been validated with Hawaiian college student population, both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were used to determine and confirm factors structures in this sample. More specifically, EFA was used to explore how the latent constructs are related to observed indicators and CFA was used to evaluate the constructs in the proposed measurement model (Bandalos & Finney, 2010). More specifically, in the EFA approach; a principal

component analysis was first conducted using SPSS to determine the dimensionality of the data. Once the number of factors was identified, a Principal Axis Factoring (PAF) with oblique rotation was implemented in SPSS to find the optimal factor structure. In order to check the qualities of constructs, I conducted reliability tests for Hawaiian identity and academic self-efficacy

In SEM, a latent construct is usually defined by multiple indicators and the relationships among the constructs and variables are tested based on theoretical models while measurement error is accounted for at the same time (Schumacker & Lomax, 2016). In this research, Hawaiian identity and academic self-efficacy were hypothesized to have a positive relationship with each other and a positive effect on academic performance. Therefore, a structural equation model was appropriate since both latent and observed variables were analyzed (Schumacker & Lomax, 2016). The observed outcome variables were end of semester GPA, persistence from fall to spring semester and grades in English, math, Hawaiian studies and Hawaiian language classes. Prior to running the primary SEM analyses, construct validity and reliability of the scales were evaluated using confirmatory factor analysis. Maximum Likelihood Estimation is used to estimate CFA and SEM with continuous outcomes in MPlus software (Muthen & Muthen, 2019). Due to a non-normal item in the MEIM scale, another estimation method, maximum likelihood with robust standard errors (also called “Satorra-Bentler estimator”) is also applied to analyze CFA and SEM for Hawaiian identity. Since the PER observed variable was dichotomous and the sample was small, weighted least square (WLS) estimation was appropriate for that analysis. For all other SEM analyses, I analyzed the model fit, direct effects and indirect effects to test the hypotheses including mediated effects, using the determined measurement model from CFA.

Chapter 4: Results

In this chapter, I present the findings of the research. I used factor analysis and structural equation modeling to examine the characteristics and relationships of the latent constructs Hawaiian identity and academic self-efficacy and their effects on academic achievement, addressing my research questions and hypotheses.

In the fall 2018 semester, the average GPA for all students in the sample was 1.95. During this semester, 74 (70.5%) of the participants enrolled in English 100 and 53 (50.5%) enrolled in an introductory math class, which are general education requirements. Enrollment in Hawaiian studies or language is based on interest or major requirements. There were 19 (18.1%) students who enrolled in Hawaiian studies and nine (8.5%) who enrolled in a Hawaiian language classes. Overall, students performed better in these classes. See grade distribution for fall 2018 classes in Table 1 below.

Table 1
Fall 2018 Grade Distribution and Enrollment in Classes

Final Grade	ENG	MATH	HWST	HAW
A	19 (25.6)	1 (1.8)	5 (26.3)	5 (55.5)
B	13 (17.6)	7 (13.2)	6 (31.6)	3 (33.3)
C	12 (16.2)	10 (18.8)	2 (10.5)	0
D	3 (4.0)	3 (5.6)	3 (15.6)	0
F or Withdrew	27 (36.4)	32 (60.4)	3 (15.6)	1 (11.1)
F	19 (25.6)	21 (39.6)	3 (15.6)	0
Withdrew	8 (10.8)	11 (20.7)	0	1 (11.1)
Total	74	53	19	9
% of total enrollment	70.4%	50.5%	18.1%	8.5%

Note: Percentage of grade over total enrolled for each class presented in parentheses.

A dichotomous variable for persistence was created to reflect whether students enrolled in the spring 2019 semester. Of the 105 participants who enrolled in fall 2018, 72 (68.6%) re-

enrolled in Spring 2019. In spring 2019, the average GPA was 1.84, among the remaining 72 students. Grade achievement decreased overall. Students also enrolled in targeted classes at lower rates, with the exception of an increase in students enrolling in Hawaiian language classes. I addressed the small sample sizes by combining grades from both semesters for analysis. In spring 2019, 18 (25.0%) students enrolled in an English class. Compared to the fall semester, students who took English in the first semester fared better. A larger number of students, 31 (43%), enrolled in math during the spring semester. Some re-enrolled after not passing in the fall. Depending on students' majors, a D grade in math may be acceptable as passing. Otherwise, they are required to earn a C as a prerequisite for a higher math class. See spring grade distribution in Table 2 below. In order to get a larger sample for all classes, fall and spring enrollment and grades were combined.

Table 2
Spring 2019 Grade Distributions and Class Enrollment

Final Grade	ENG	MATH	HWST	HAW
A	2 (11.1)	3 (9.7)	4 (33.3)	6 (42.8)
B	3 (16.6)	0	1 (8.3)	2 (14.2)
C	0	7 (22.6)	1(8.3)	1 (7.1)
D	1 (5.5)	7 (22.6)	1(8.3)	3 (21.4)
F or Withdrew	12 (66.6)	14 (45.2)	5 (41.6)	2 (14.2)
F	8 (44.4)	8 (25.8)	2 (16.6)	1 (7.1)
Withdrew	4 (22.2)	6 (19.4)	3 (.25)	1 (7.1)
Total	18	31	12	14
% total enrollment	25%	43%	17%	19%

Note: Percentage of grade over total enrolled for each class presented in parentheses.

Hawaiian Culture Scale

I tested the reliability of the 6-item HCS. The Cronbach's alpha was .695 and standardized alpha was .703. Hishinuma et al. (2000) reported the internal consistency of the HCS subscales as Cronbach alphas ranging from .82 to .96 for the different subscales, indicating sufficient internal consistency. Their study involved both Hawaiian and non-Hawaiian

adolescents in Grades 9-12. The difference in the ages between my sample and theirs may have accounted for the differences in the scale's reliability. See the HCS item and summary statistics below in Table 3. Based on my results, HCS was removed due to low Cronbach's alpha coefficients. Thereafter, the MEIM scale was used as the sole measure of the Hawaiian identity construct.

Table 3
HCS Item and Summary Statistics

	Mean	Min	Max	Range	Variance	Std. Dev.
I learned about the Native Hawaiian way of life from my family at home	2.89	1	5	4	1.237	1.112
I learned about the Native Hawaiian way of life from school.	3.28	1	5	4	1.144	1.070
I learned about the Native Hawaiian way of life from my friends and neighbors	2.64	1	5	4	1.002	1.001
How much do you value Hawaiian beliefs, behaviors and attitudes?	3.95	2	5	3	.700	.836
How much do you value non-Hawaiian beliefs, behaviors and attitudes?	3.40	1	5	4	.896	.947
How important is it to you to maintain Hawaiian cultural traditions?	3.99	2	5	3	.760	.872
Item Means	3.369				1.519/.309	N/A
Item Variances	.961				1.848/.047	N/A

Multigroup Ethnic Identity Measure

I tested the reliability of the 12-item MEIM scale. The Cronbach's alpha was .902 with a standardized alpha of .905. Roberts and colleagues (1999) tested the MEIM among adolescents from diverse groups and found that the reliability of the 12-item MEIM scale across ethnic

groups was higher than .80. The MEIM item and summary statistics are displayed in Table 4 and the correlation matrix in Table 5.

Table 4
MEIM Item and Summary Statistics

	Mean	Min	Max	Range	Variance	Std. Dev.
I have a clear sense of my ethnic identity and what it means to me.	3.72	1	5	4	.875	.935
I have a lot of pride in my ethnic group and its accomplishments	4.24	2	5	3	.510	.714
I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.	3.59	1	5	4	.956	.978
I think a lot about how my life will be affected by my ethnic group membership.	3.30	1	5	4	1.118	1.057
I understand pretty well what my ethnic group membership means to me.	3.58	1	5	4	.784	.886
In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.	3.37	1	5	4	1.120	1.058
I participate in cultural practices of my own group, such as special food, music, or customs.	3.53	2	5	3	1.040	1.020
I feel good about my cultural or ethnic background.	4.37	1	5	4	.601	.775
I am happy that I am a member of the group I belong to.	4.47	2	5	3	.463	.680
I am active in organizations or social groups that include mostly members of my own ethnic group.	2.83	1	5	4	1.259	1.122
I have a strong sense of belonging to my own ethnic group.	3.56	1	5	4	1.172	1.082
I feel a strong attachment towards my own ethnic group.	3.74	1	5	4	.885	.941
Item Means	3.693				.221	
Item Variances	.899				.070	

Table 5
MEIM Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12
1-I have a clear sense of my ethnic identity and what it means to me.	1.000											
2-I have a lot of pride in my ethnic group and its accomplishments	0.589	1.000										
3-I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.	0.359	0.375	1.000									
4-I think a lot about how my life will be affected by my ethnic group membership.	0.348	0.298	0.606	1.000								
5-I understand pretty well what my ethnic group membership means to me.	0.579	0.646	0.533	0.456	1.000							
6-In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.	0.396	0.353	0.641	0.482	0.516	1.000						
7-I participate in cultural practices of my own group, such as special food, music, or customs.	0.438	0.365	0.376	0.276	0.442	0.492	1.000					
8-I feel good about my cultural or ethnic background.	0.488	0.516	0.241	0.271	0.467	0.299	0.428	1.000				
9-I am happy that I am a member of the group I belong to.	0.386	0.561	0.348	0.335	0.535	0.371	0.303	0.653	1.000			
10-I am active in organizations or social groups that include mostly members of my own ethnic group.	0.303	0.315	0.409	0.336	0.372	0.467	0.467	0.173	0.232	1.000		
11-I have a strong sense of belonging to my own ethnic group.	0.611	0.497	0.447	0.437	0.549	0.529	0.388	0.482	0.489	0.571	1.000	
12-I feel a strong attachment towards my own ethnic group.	0.421	0.435	0.564	0.389	0.539	0.609	0.435	0.396	0.535	0.477	0.653	1.000

For the 12 MEIM items, the principal component analysis revealed two factors, “Effort to Learn More about the Ethnic Group” and “Sense of Belonging to the Ethnic Group,” which aligned with the two factors Phinney and Ong (2007) identified, “Exploration” and “Commitment.”

In order to identify the best factor structure, Principal Axis Factoring (PAF) analysis was conducted without rotation and then with oblique rotation. Once rotated, items were tested to improve factor structure. The initial PAF results for Factor 1 was an eigenvalue of 5.929, with 49.408% variance explained by the factor. The eigenvalue for Factor 2 was 1.337, explaining 11.143% of the variance in the model. The total variance explained by the initial model was 60.551%. The optimal PAF results, after rotation and removal of Items 1, 5, 7, and 11, for Factor 1 was an eigenvalue value of 3.953, explaining 49.415% of the total variance. The eigenvalue for Factor 2 was 1.279, explaining 15.988% of the variance in the model.

When rotated, the factor structure reveals pattern coefficients, which represent the relationship of the variable to the latent factor, while controlling for other factors; whereas, structure coefficients represent the simple correlation between the variable and factor (Bandalos & Finney, 2010). See the intermediate factor structure in Table 6, for all items’ pattern and structure coefficients with oblique rotation. The data set was re-labeled to reflect these factors, as variables and factor scores were used for the SEM analyses.

Table 6
Intermediate results of MEIM EFA with Factor names, Pattern and Structure Coefficients before items removal

MEIM Item	MEIM Item Number	Factor 1 Effort to learn more about ethnic group	Factor 2 Sense of belonging to group
I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.	MEIM3	.862 (.774)	-.129 (.455)
I think a lot about how my life will be affected by my ethnic group membership.	MEIM4	.616 (.618)	.003(.421)
In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.	MEIM6	.852 (.798)	-.080 (.498)
I am active in organizations or social groups that include mostly members of my own ethnic group.	MEIM10	.658 (.621)	-.055 (.391)
I have a lot of pride in my ethnic group and its accomplishments	MEIM2	.008 (.518)	.751(.757)
I feel good about my cultural or ethnic background.	MEIM8	-.218 (.400)	.911 (.763)
I am happy that I am a member of the group I belong to.	MEIM9	-.026(.486)	.756 (.738)
I feel a strong attachment towards my own ethnic group.	MEIM12	.599 (.745)	.221 (.622)
I have a clear sense of my ethnic identity and what it means to me.	MEIM1	.154 (.551)	.586 (.691)
I understand pretty well what my ethnic group membership means to me.	MEIM5	.336 (.683)	.511 (.740)
I participate in cultural practices of my own group, such as special food, music, or customs.	MEIM7	.459 (.561)	.385 (.511)
I have a strong sense of belonging to my own ethnic group.	MEIM11	.599 (.720)	.216 (.696)

Note: Factor Loadings assigned to factor are in boldface. Pattern coefficients are provided with structure coefficients in parentheses.

From a statistical perspective, the pattern coefficients for the MEIM Items 1, 5, 7, and 11 were non-discriminant, and I removed them as a result of weak factor structures. See Table 7 for the final factor model, with removed Items 1, 5, 7 and 11. From a theoretical perspective, Item 1:

“I have a lot of pride in my ethnic group and its accomplishments,” Item 5: “I understand pretty well what my ethnic group membership means to me,” and 7: “I participate in cultural practices of my own group, such as special food, music, or customs,” could reflect ambiguous language and could mean different things to different individuals. Item 1, in the intermediate factor structure had moderate loading to Factor 2. However, after further testing, this relationship weakened, and it was, therefore, removed. Item 11 was not as strong as other items in representing the factors, even though Item 11: “I have a strong sense of belonging to my own ethnic group,” explicitly states sense of belonging.

Table 7
Final results of MEIM EFA with Factor names, Pattern and Structure Coefficients with Items 1,5,7 and 11 removed

MEIM Item	MEIM Item Number	Factor 1 Effort to learn more about ethnic group	Factor 2 Sense of belonging to group
I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.	MEIM3	.877 (.824)	-.093 (.406)
I think a lot about how my life will be affected by my ethnic group membership.	MEIM4	.619 (.632)	.023 (.375)
In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.	MEIM6	.799 (.793)	-.011 (.444)
I am active in organizations or social groups that include mostly members of my own ethnic group.	MEIM10	.574 (.566)	-.014 (.312)
I feel a strong attachment towards my own ethnic group.	MEIM12	.580 (.728)	.261 (.591)
I have a lot of pride in my ethnic group and its accomplishments	MEIM2	.153 (.481)	.578 (.665)
I feel good about my cultural or ethnic background.	MEIM8	-.111 (.365)	.836 (.773)
I am happy that I am a member of the group I belong to.	MEIM9	.003(.486)	.850 (.852)

Note: Factor Loadings assigned to factor are in boldface. Pattern coefficients are provided with structure coefficients in parentheses.

College Academic Self Efficacy Scale

I tested the internal consistency of the 16-item adapted CASES. The Cronbach's alpha was .915 with a standardized alpha of .916. The reliability was consistent with previous research by Owen and Froman (1988) and Choi (2005), which both yielded alpha coefficients of .92. This confirmed that this measure was acceptable among this sample. See the CASES item and summary statistics in Table 8 and correlation matrix in Table 9.

Table 8
CASES Item and Summary Statistics

	Mean	Min	Max	Range	Variance	Std. Deviation
Taking well organized notes during a lecture.	3.51	1	5	4	1.079	1.039
Reading and understanding text books or class material.	3.42	1	5	4	1.015	1.007
Managing time efficiently for learning.	3.14	1	5	4	1.027	1.014
Comprehending the meaning of what I study.	3.40	1	5	4	1.088	1.043
Completing my homework or daily assignments on time.	3.55	1	5	4	1.115	1.056
Completing papers or essays.	3.63	1	5	4	1.313	1.146
Using technology tools to learn.	3.96	1	5	4	.902	.950
Setting short term goals for my study.	3.26	1	5	4	1.154	1.074
Setting long term goals for my study.	3.41	1	5	4	1.071	1.035
Taking comprehensive or cumulative exams.	3.15	1	5	4	1.111	1.054
Remembering what I have learned.	3.29	1	5	4	.841	.917
Taking pop quizzes.	2.79	1	5	4	1.071	1.035
Participating in class discussion.	3.14	1	5	4	1.547	1.244
Answering questions in a large class.	2.87	1	5	4	1.771	1.331
Making up class work if I miss class	3.96	1	5	4	.902	.950
Talking to teachers or instructors when I need help	3.74	1	5	4	1.289	1.135
Item Means	3.389				.115	
Item Variances	1.144				.058	

Table 9
CASES Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1-Taking well organized notes during a lecture.	1															
2-Reading and understanding text books or class material	0.536	1														
3-Managing time efficiently for learning.	0.45	0.43	1													
4-Comprehending the meaning of what I study.	0.323	0.617	0.427	1												
5-Completing my homework or daily assignments on time.	0.335	0.277	0.59	0.339	1											
6-Completing papers or essays.	0.412	0.344	0.543	0.391	0.736	1										
7-Using technology tools to learn.	0.234	0.208	0.295	0.365	0.175	0.287	1									
8-Setting short term goals for my study.	0.311	0.281	0.566	0.491	0.492	0.477	0.358	1								
9-Setting long term goals for my study.	0.366	0.369	0.622	0.435	0.548	0.567	0.241	0.622	1							
10-Taking comprehensive or cumulative exams.	0.455	0.564	0.501	0.67	0.416	0.414	0.371	0.356	0.453	1						
11-Remembering what I have learned.	0.319	0.452	0.432	0.573	0.421	0.395	0.244	0.276	0.413	0.661	1					
12-Taking pop quizzes.	0.289	0.472	0.414	0.559	0.292	0.274	0.158	0.386	0.359	0.647	0.499	1				
13-Participating in class discussion.	0.211	0.266	0.35	0.43	0.247	0.206	0.102	0.282	0.283	0.453	0.411	0.39	1			
14-Answering questions in a large class.	0.231	0.343	0.413	0.427	0.354	0.301	0.156	0.428	0.34	0.433	0.394	0.398	0.889	1		
15-Making up class work if I miss class	0.4	0.499	0.485	0.462	0.539	0.446	0.297	0.424	0.368	0.515	0.421	0.403	0.322	0.392	1	
16-Talking to teachers or instructors when I need help	0.293	0.364	0.433	0.494	0.376	0.325	0.249	0.409	0.434	0.515	0.459	0.42	0.496	0.474	0.49	1

In order to define the academic self-efficacy variables, the principal component analysis revealed three factors, Factor 1: “Understanding what you learned,” Factor 2: “Academic skills, study skills and time management” and Factor 3: “Engagement in classroom activities.” I re-labeled these variables for further analyses.

In order to identify the best factor structure, Principal Axis Factoring (PAF) extraction was conducted without rotation and then with oblique rotation. Once rotated, items were removed and tested to improve the factor structure. The initial PAF results for Factor 1 was an eigenvalue of 7.195, with 44.967% variance explained by Factor 1. The eigenvalue for Factor 2 was 1.575, explaining 9.841% of the variance in the model. The eigenvalue for Factor 3 was 1.252, explaining 7.823% of the variance in the model. The total variance explained by the initial model was 62.632%. The optimal PAF results, after rotation and removal of Items 1, 7, 15 and 16, for Factor 1 was an eigenvalue of 5.877, explaining 48.977% of the variance. The eigenvalue for Factor 2 was 1.517, explaining 12.644% of the variance in the model. The eigenvalue for Factor 3 was 1.162, explaining 9.685% of the variance in the model.

Table 10 displays the rotated factor structure before removal of items and Table 11 shows the final pattern and structure coefficients. The identified factor structure with elimination of Item 1: “taking well organized notes in a lecture,” Item 7: “using technology tools to learn,” Item 15: “making up class work if I miss class,” and Item 16: “talking to teachers or instructors if I need help,” was based on weak pattern and structure coefficients. For all removed items, the pattern coefficients were weak, meaning that the correlations between the item and the factor were weak when controlling for other factors. Additionally, the structure coefficients, correlations between the item and factor were not strong. From a theoretical perspective, removal of Item 7 made sense, since technology and its relevance to academic success, has evolved since

the measure was created. Items 15 and 16 were conditional, “if I miss class” or “if I need help” which may have weakened their relationship to the factors.

Table 10

Intermediate results of CASES EFA with Pattern and Structure Coefficients

ASE Item	ASE Item Number	Factor 1 Understanding what you learned	Factor 2 Academic skills, study skills and time management	Factor 3 Engaging in classroom activities
Reading and understanding text books	ASE2	.803 (.720)	-.026 (.451)	-.118 (.319)
Comprehending the meaning of what I study.	ASE4	.785 (.799)	-.016 (.519)	.043(.475)
Taking comprehensive or cumulative	ASE10	.890 (.869)	-.040 (.549)	.010 (.489)
Remembering what I have learned.	ASE11	.618 (.696)	.053 (.493)	.078 (.446)
Taking pop quizzes.	ASE12	.673 (.685)	-.066 (.420)	.098 (.446)
Managing time efficiently for learning.	ASE3	.148 (.598)	.643 (.762)	.050 (.414)
Completing my homework or daily assignments on time.	ASE5	-.128 (.463)	.886 (.809)	.014 (.331)
Completing papers or essays.	ASE6	-.017 (.485)	.842 (.790)	-.093 (.266)
Setting short term goals for my study.	ASE8	.028(.496)	.629(.690)	.098 (.389)
Setting long term goals for my study.	ASE9	.079 (.536)	.686 (.743)	.013 (.357)
Participating in class discussion.	ASE13	-.007 (.500)	-.111 (.339)	1.038 (.989)
Answering questions in a large class.	ASE14	-.047 (.515)	.110 (.463)	.877 (.899)
Taking well organized notes during a lecture.	ASE1	.421 (.525)	.266 (.487)	-.128 (.224)
Using technology tools to learn.	ASE7	.307 (.378)	.195 (.352)	-.103 (.153)
Making up class work if I miss class	ASE15	.88 (.623)	.337 (.603)	.026 (.389)
Talking to teachers or instructors when I need help	ASE16	.340 (.602)	.170 (.511)	.269 (.533)

Note: Factor Loadings assigned to factor are in boldface. Pattern coefficients are provided with structure coefficients in parentheses.

Table 11
Final results of CASES EFA with Pattern and Structure Coefficients

ASE Item	ASE Item Number	Factor 1 Understanding what you learned	Factor 2 Academic skills, study skills and time management	Factor 3 Engaging in classroom activities
Reading and understanding text books	ASE2	.716 (.683)	.015 (.432)	-.076 (.320)
Comprehending the meaning of what I study.	ASE4	.790 (.811)	.020 (.523)	.015 (.453)
Taking comprehensive or cumulative	ASE10	.870 (.866)	-.001 (.544)	-.006(.467)
Remembering what I have learned.	ASE11	.639 (.710)	.081 (.499)	.037 (.420)
Taking pop quizzes.	ASE12	.710 (.714)	-.039 (.429)	.052 (.422)
Managing time efficiently for learning.	ASE3	.142 (.576)	.645 (.757)	.053 (.405)
Completing my homework or daily assignments on time.	ASE5	-.098(.446)	.871 (.806)	-.007 (.312)
Completing papers or essays.	ASE6	-.033 (.463)	.871 (.789)	-.083 (.262)
Setting short term goals for my study.	ASE8	.027 (.473)	.625 (.684)	.098(.380)
Setting long term goals for my study.	ASE9	.096 (.533)	.711 (.763)	-.019 (.337)
Participating in class discussion.	ASE13	.054 (.511)	-.099 (.342)	.954 (.941)
Answering questions in a large class.	ASE14	-.054 (.519)	.101 (.466)	.935(.949)

Note: Factor Loadings assigned to factor are in boldface. Pattern coefficients are provided with structure coefficients in parentheses.

Structural Equation Modeling Analysis

A structural equation modeling analysis was run using maximum likelihood with robust standard errors (MLM, also called “Satorra-Bentler estimator”) in Mplus software in order to investigate the relationship among latent factors and observed outcomes. Since there was non-normality in one item, this estimation method was appropriate. After running preliminary analysis on the measurement model, the model fit was weak, so adjustments were made based on both theoretical and statistical reasons.

Original model. The maximum likelihood model test was run, yielding a weak model fit. The model indices were not acceptable. See model fit indices in Table 14. The Chi-square value is 221.434 ($df=160$), $p = 0.0009$, CFI is .914 and TLI is .899, SRMR is 0.060 and RMSEA is

0.060 with 90PCI (0.040, 0.079), $p = .187$. Model specifications were suggested wherein continued model fit was tested. In order to reach a better model fit, I correlated ASE Item 5: “Completing my homework or daily assignments on time” and Item 6: “Completing papers or essays,” since they are both measuring completion of assignments in some fashion.

Final model. After adjustments were tested and confirmed, the model fit indices indicated good model fit, see Table 12. The Chi-square test was 200.727 ($df=159$), $p < 0.05$, CFI was .965 and TLI is .957, SRMR is 0.049 and RMSEA is 0.050 with 90% CI (0.024, 0.070), $p = .0000$. AIC index is 4975.288. The standardized factor loadings for all factors are shown in Figure 4 with standard estimates and significance at a $p < .0001$ level and residual variances.

Table 12
Goodness of Fit and Model Fit Statistics

Fit Measure	Original Model	Final Model
χ^2	221.434	200.727
Df	160	159
P value	.0009	.014
Scaling Correction factor for MLM	1.1116	1.1106
SRMR	.060	.055
TLI	.929	.951
AIC	4996.515	4975.288
BIC	5186.292	5136.719
Sample-Size adjusted BIC	4961.149	4939.417
CFI	.940	.959
RMSEA	.060	.050

Note: The chi-square value for MLM cannot be used for chi-square difference testing in the regular way (M-Plus website, 2020)

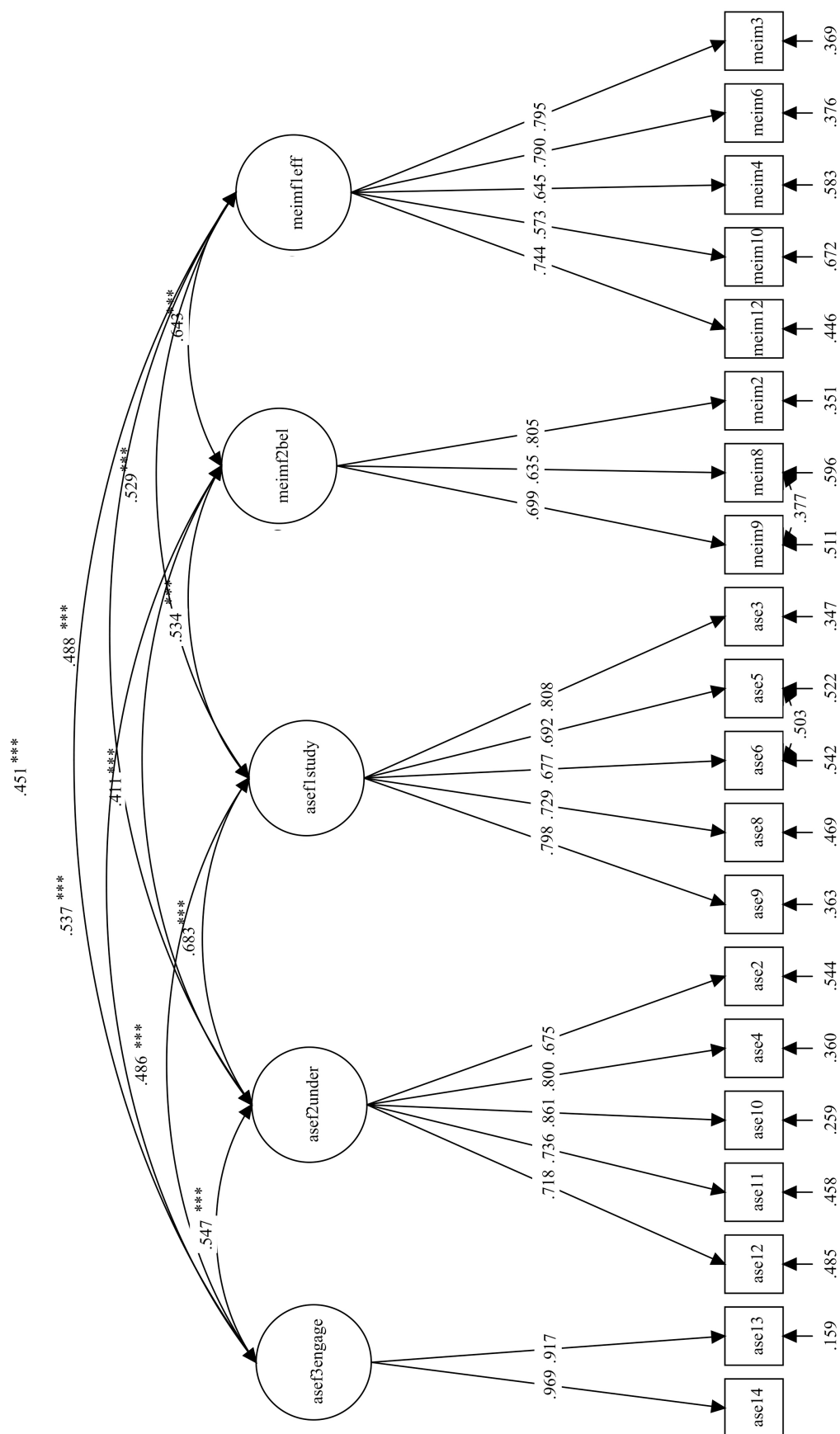


Figure 4. Full model with academic self efficacy and Hawaiian identity factors with all relationships and path coefficients. All are significant at the *** $p < .001$ level.

Missing data and factor scores. For the first research question that explored the relationships between Hawaiian identity and academic self-efficacy, all data, including latent variables and observed variables were available. For all other research questions related to latent variables and observed variables of class grades, the sample size varied. In order to run these analyses, factor scores were generated. Factor scores represent the relative standing of each participant on the latent factor continuum (Kline, 2011). Use of factor scores was applied to this research in order to perform the tests, with varying samples across the different classes.

Research Questions

Research Question 1. What is the relationship between Hawaiian identity and self-efficacy among First Year Native Hawaiian community college students? When exploring the relationships between Hawaiian identity and academic self-efficacy, both raw scores of the original variables and the factor scores were run. The correlations between the specified factors were all significant at the $p < .001$ significance level. Table 15 shows the correlations between factors using the raw data. Correlations were also run between factors using factors scores in parentheses. Both scores are presented to provide a better understanding of how the factor scores differed from the raw score data.

Table 15
Correlations for All Factors

	MEIM F1Effort	MEIM F2Belong	ASE F1UNDERSTAND	ASE F2STUDY	ASE F3ENGAGE
MEIM F1Effort	1.00				
MEIM F2Belong	.610*** (.644**)	1.00			
ASE F1UNDERSTAND	.489*** (.459**)	0.349** (.356**)	1.00		
ASE F2STUDY	.529*** (.435**)	0.463*** (.395**)	0.683*** (.695**)	1.00	
ASE F3ENGAGE	.452*** (.427**)	0.479*** (.435**)	0.547 ***(.587**)	0.486***(.464**)	1.00

Note: Raw data correlations are displayed with factor score correlations in parentheses. Significance at ** $p < .01$, *** $p < .001$.

Hypothesis 1. There is a significant positive relationship between academic self-efficacy and Hawaiian identity. The relationships between all factors were significant with standard estimates reported in Figure 3. The relationship between Hawaiian Identity factors: Effort and Belonging and Academic Self- Efficacy factors: Understanding, Study Skills/Time Management, and Engagement can be divided into parts. All proportions of covariance between each factor were significant. All factor loadings were significant, see Figure 4, as well as the correlation between all factors, shown in Table 15.

Research Question 2. What is the influence of Hawaiian identity and self-efficacy on the academic performance of First Year Native Hawaiian community college students?

Hypothesis 2a. There is a significant positive effect of self-efficacy on academic performance.

Hypothesis 2b. There is a significant positive effect of Hawaiian identity on academic performance.

Both raw scores and factor scores were used to run this analysis. For both, the only significant ($p < .01$) effect was ASE3, engaging in classroom activities on GPA. See Figure 5 to view the raw data factor model with path coefficients. This can be interpreted as for every increase in 1 standard deviation increase of score of engagement in classroom activities, the GPA will increase by .309 points. All other factors did not have a significant effect on GPA. Hypothesis 1 was partially supported, while hypothesis 2 was null.

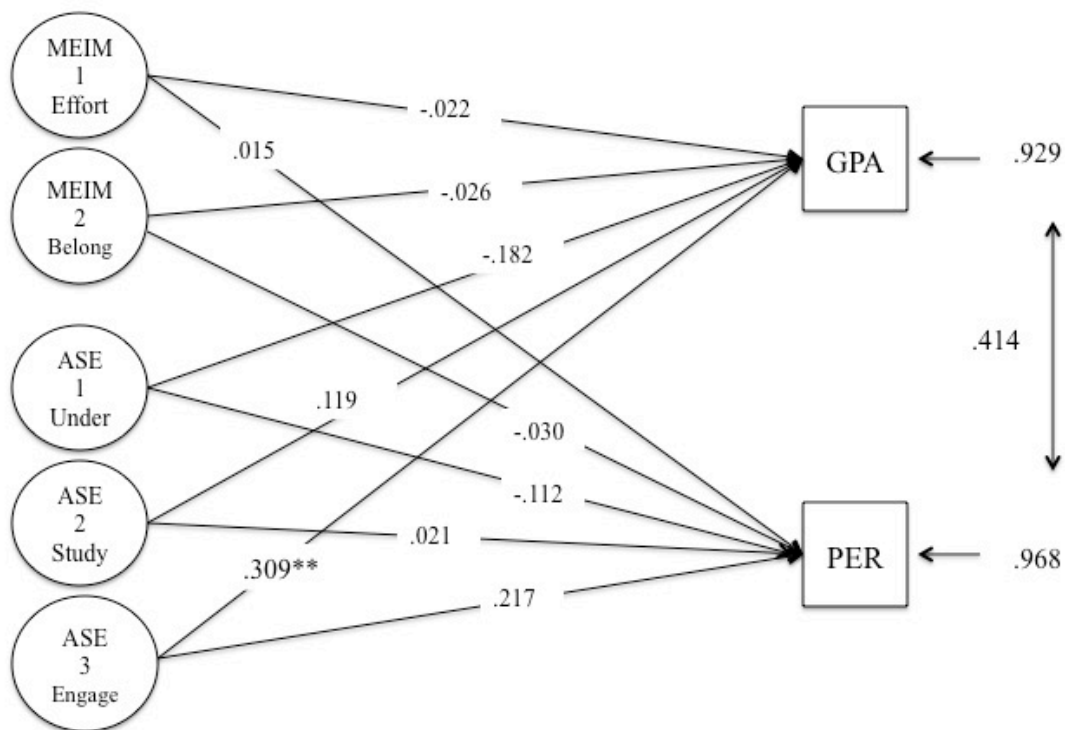


Figure 5. Raw data factor model with academic self-efficacy and Hawaiian identity factors with path coefficients to GPA and Persistence. ** $p < .01$.

Research Question 3. What is the effect of Hawaiian identity and academic self-efficacy on academic performance in English, math, Hawaiian studies and Hawaiian language classes?

Hypothesis 3. There is a significant positive relationship between Hawaiian Identity on Hawaiian studies and/or Hawaiian language courses.

To test hypothesis 3, the effects of HI on Hawaiian studies and Hawaiian language grades were examined. Although English and math grades were not a part of the hypothesis, or self-efficacy, the effects of HI were tested on English and math and self-efficacy factors were also

tested. In order to test this hypothesis, factor scores were used, due to different sample sizes for each class.

For the English (n=85), math (n=70) and Hawaiian studies (n=29) grade analyses there were no significant effects. Figure 6 (English), Figure 7 (math) and Figure 8 (Hawaiian studies) show the path coefficients for the effects of factors on each class grade, respectively.

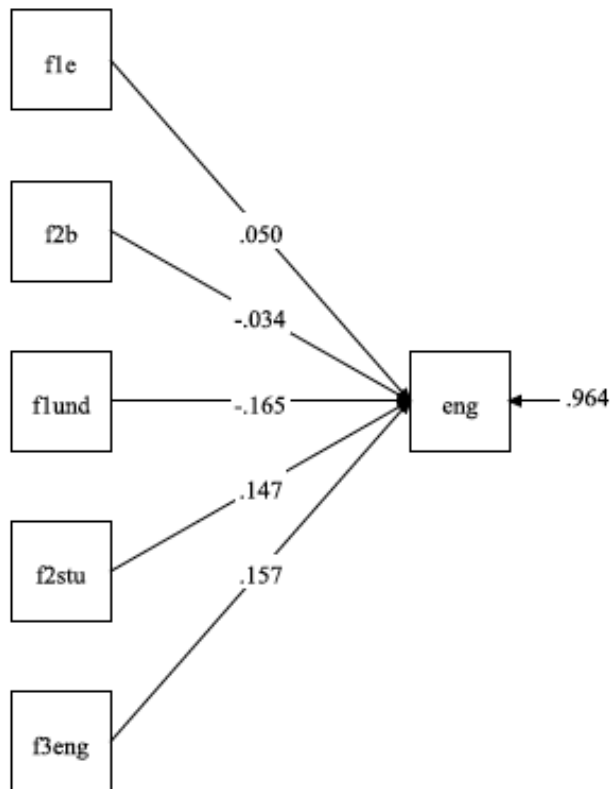


Figure 6. Path coefficients for factors on English grade.

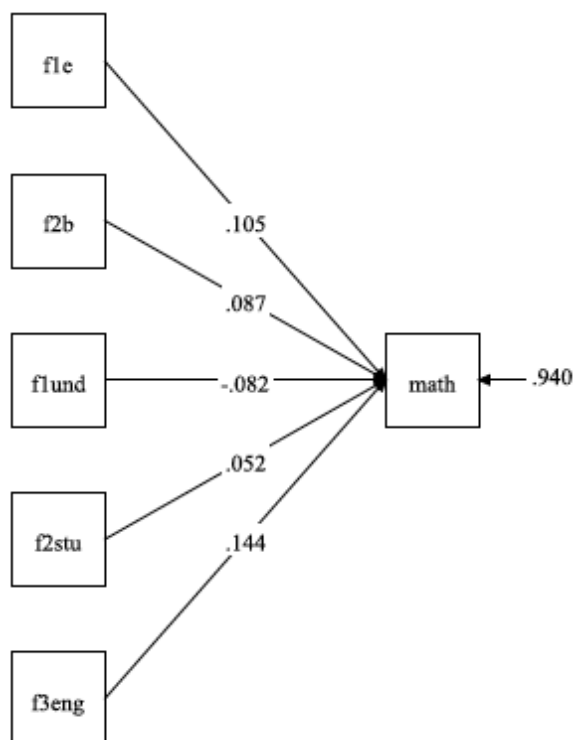


Figure 7. Path coefficients for factors on math grade.

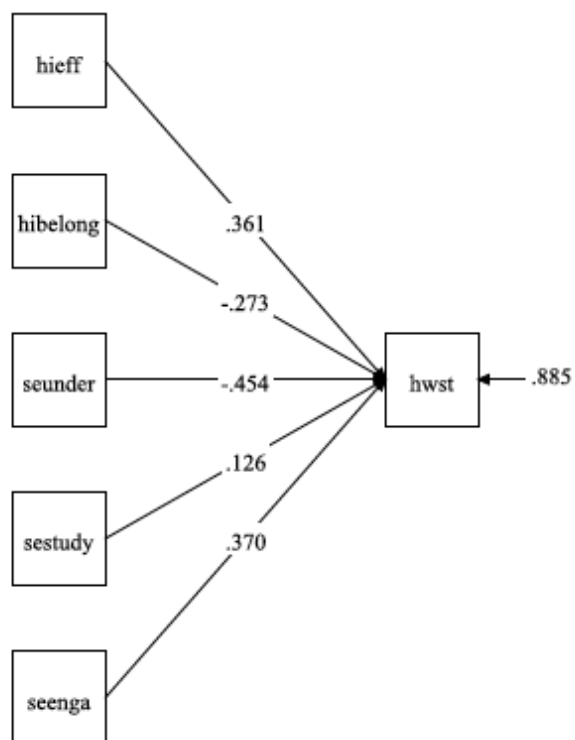


Figure 8. Path coefficients for factors on Hawaiian studies grade.

For Hawaiian language grade, the sample was 20. Contrary to the other classes, there was a significant positive effect on Hawaiian language grade by ASEF1, “Understanding what you learned” ($p<.01$) and ASEF2 “Academic skills, study skills and time management,” ($p<0.001$). See Figure 9 for the path coefficients for the effects of factors on Hawaiian language grade. This means that for every 1 standard deviation increase of “Understanding what you learned,” Hawaiian language grade increased by .316 and for every 1 standard deviation increase of “Academic skills, study skills and time management,” Hawaiian language grade increased by .613. The R squared value was .776, with a significant $p = .000$.

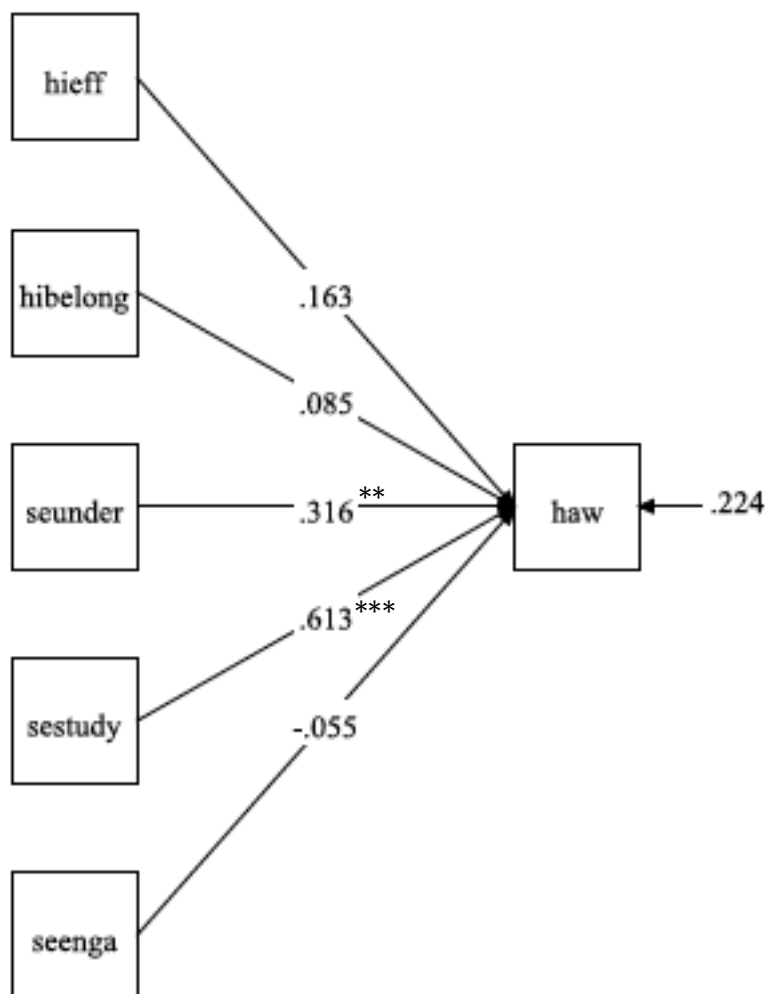


Figure 9. Path coefficients for factors on Hawaiian language grade. ** $p<.01$ and *** $p<.001$.

After all the relationships were examined, the hypothesis, “*there is a significant positive effect of Hawaiian identity on Hawaiian studies and/or Hawaiian language courses*” was null. However, academic self-efficacy factors, “Understanding what you learned,” and “Academic skills, study skills and time management,” had a positive significant effect on Hawaiian language grade.

Research Question 4. What are the possible mediated effects of self-efficacy on the effects of Hawaiian identity on academic performance?

Hypothesis 4a. Self-efficacy as a mediator has a positive effect on the relationship between Hawaiian identity and Fall GPA and persistence from fall to spring semester.

Hypothesis 4b. Self-efficacy as a mediator has a positive effect on the relationship between Hawaiian identity and end-of-term English, Math, Hawaiian studies or Hawaiian language course completion and grade.

To address Sub-Hypothesis 4a, a mediation test was run. There were two positive significant mediated effects. One was of HI factor 1: Effort to learn more about the ethnic group through ASE Factor 3: Engaging in classroom activities on GPA and the second was HI factor 2: Sense of belonging to your ethnic group through ASE Factor 3: Engaging in classroom activities on GPA. There were no other significant mediated effects. The direct effect of HI factor 1: Effort to learn more about the ethnic group to ASE Factor 3: Engaging in classroom activities was .292 ($p < 0.05$) and the direct effect of ASE Factor 3: Engaging in classroom activities on GPA was .300 ($p < 0.01$). The entire mediated path was calculated as $.292(.301) = 0.088$. The direct effect of HI Factor 2: Sense of belonging to your ethnic group to ASE Factor 3: Engaging in classroom activities was .309 ($p < 0.05$) and the direct effect of ASE Factor 3: Engaging in classroom

activities on GPA was .301 ($p < .01$). The entire mediated path was calculated as $.309(.301) = 0.093$. See the full mediated model in Figure 8.

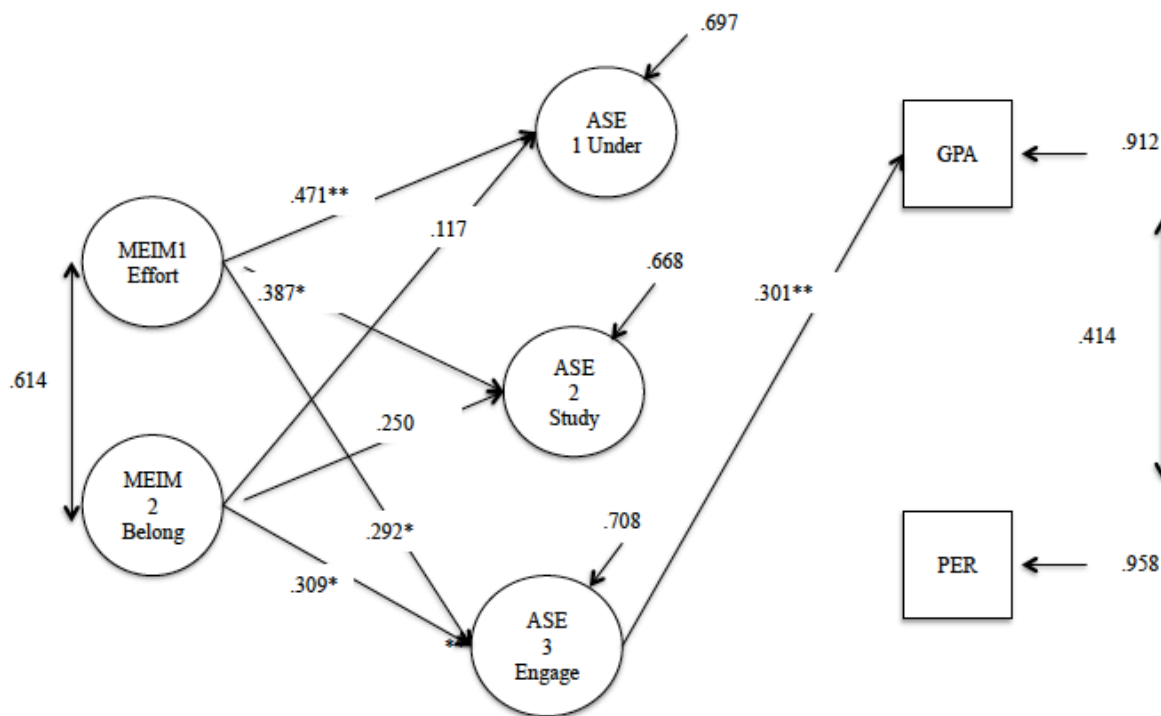


Figure 8. Full mediated model. Path coefficients for Hawaiian identity items and factors through self-efficacy items and factors on GPA and PER. ** $p < .01$, * $p < .05$

To address Sub-Hypothesis 4b, a mediated test was run for all class grades. There were no significant mediated effects of HI through ASE for any classes, English, math, Hawaiian studies and Hawaiian language grade.

Chapter 5: Discussion

This research explored the influence of Hawaiian identity and academic self-efficacy on academic performance among first year Native Hawaiian students in a community college. This final chapter connects the findings to previous research and theory. I also discuss the limitations of the research, make recommendations for future research, and discuss implications for policy and practice.

Academic Self-Efficacy

This study applied Bandura's (1995; 1997) concept of self-efficacy to Native Hawaiian community college students. Collecting academic self-efficacy data before students started their first year of college allowed me to assess self-efficacy in academic skills prior to their college experiences. This study revealed a clear three-factor structure underlying this sample data, which is consistent with other populations studied (Owen & Forman, 1988). The three factors in this study related to academic self-efficacy were labeled: (a) academic skills, study skills and time management; (b) understanding what was learned; and (c) engaging in classroom activities, which aligned to the three factors found by Owen and Fromen (1988): "(1) Overt, social situations, (2) Cognitive Operations, and (3) Technical skills" (p. 5). Applying this to the current findings, overt social situations aligns with engaging in classroom activities, cognitive operations is consistent with understanding what is learned and technical skills aligns with academic skills. For this group of first year Hawaiian students, the academic self-efficacy measurements were valid based on the determined factor structure. From these results, I was able to see how much each factor contributed to the various academic achievement outcomes.

I found that the item "using technology tools to learn," did not fit the factor structure for this sample. This may be because in 2018, access to and use of technology in learning is

common and perhaps even mandatory for success in college. When Owen and Froman (1988) developed the CASES, students were not required to use technology in classroom settings. Other items that did not fit the factor structure that I removed were Item 15: “making up class work if I missed class,” and Item 16: “talking teachers or instructors when I need help.” Both items were conditional in nature, based on the premise that the student missed class or needed help, which could have influenced their responses. This survey was given to students during orientation or online, within a month of their starting college for the first time. I suppose that at this point in time, students were hopeful about their success in college and may not have seen themselves missing class or needing help.

Measuring Hawaiian Identity

The construct of Hawaiian identity is complex and embedded in the histories and narratives of Hawai‘i and its native people. My attempt to quantify the construct in this study was challenging and revealed the need for more research. I employed the MEIM to investigate students’ identity exploration and commitment and the HCS to measure values and beliefs. Clearly, more research is needed to explore multiculturalism and Hawaiian identity. In this section, I discuss the results of the scales and measures I used and how they are related to the construct of Hawaiian identity.

Multigroup Ethnic Identity Measure. The Hawaiian identity factors measured through the MEIM validated the factors of the measure itself and were consistent with previous studies. The reliability coefficient in this study was similar to previous research, such that reliability coefficients .80 were found among adolescents across ethnic groups (Roberts et al., 1999) and .90 in college-age samples (Phinney, 1992).

Erikson (1968) provided foundational work identifying three stages of identity development: foreclosure, moratorium and achieved. Since then, Phinney (1989) found that the MEIM revealed two stages, “moratorium” or “achieved,” such that students across four ethnic groups were in either the “moratorium” or “achieved” stages. Phinney and Alipuria (1990) studied the MEIM across four groups, Black, Hispanic, Asian and White college students, and found two factors that aligned with the two stages of identity development, “ethnic identity search” and “commitment.” Phinney and Ong (2007) tested the MEIM in an urban public university in southern California and determined two factors, “exploration” and “commitment” (p. 277). The factors I identified in the current study: effort to learn more about the ethnic group and sense of belonging to the ethnic group, are consistent with the factors of “exploration” and “commitment.”

In this study, MEIM Items 1, 5, 7 and 11 were removed as a result of weak factor structures. Item 5: “I understand pretty well what my ethnic group membership means to me,” and 7: “I participate in cultural practices of my own group, such as special food, music, or customs,” could reflect ambiguous language and may not represent clear connections to Hawaiian as the ethnic group, since participants may be members of multiple ethnic groups. Students who are multicultural, may participate in a variety or combination of customs related to food or music. Items 1 and 11 were also removed, even though the items stated, “I have a clear sense of my ethnic identity and what it means to me,” and “I have a strong sense of belonging to my own ethnic group.” The weak factor loadings may be attributed to the explicit nature of the item rather than the other items that included more sentimental or inferential language. Participants may have answered these items as they perceive themselves fitting the construct, rather than other items, that may represent actions.

Hawaiian Culture Scale. Hishinuma et al., (2000) found that the HCS was reliable. Some of its items focused on participants' use of the Hawaiian language and asked them to identify whether they learned the "Hawaiian way" (p.148) at home, school or from friends or neighbors. Items also addressed familiarity with practice of customs such as "net fishing," "hula," "listening to Hawaiian music," or beliefs in "nightmarchers," or "pele." Originally, I used six items that asked about the settings in which the participant learned the "Hawaiian way" and Hawaiian language. Familiarity or practice of customs and beliefs were not used in this study in attempts to remove the "racialized checklist" (Ledward, 2007, p.131) often confused with Hawaiian identity.

Of the six items I originally used, the first three items asked about the setting in which the "Hawaiian way" was learned. The item means ranged from 2.64 to 3.28, with learning the "Hawaiian way" from school rated as the highest. Although not used in the path analysis, these results revealed that students did not often learn "Hawaiian ways" from home, friends or neighbors, but instead identified school as the primary source. This could be attributed to the increase of language immersion and culture-based schools (Yamauchi et al., 2003; Takayama & Ledward, 2009) and improved Hawaiian studies and language curricula in all other schools. The long term effects of language and culture eradication in the early 1900's is ongoing and prevalent in the daily lives of Hawaiians, evidenced by lower means of participants learning the "Hawaiian way" from family, friends or neighbors. On the other hand, an attempt to revitalize language and culture through language immersion and culture-based education is more recently evident in school settings. As more of the population learns the Hawaiian language and cultural practices at a younger age and in the school settings, Hawaiian education at home may become more common.

My intent was to use the HCS subscale to measure values and beliefs, adding to the ethnic identity factors of “exploration” and “commitment.” Responses to the items “How much do you value Hawaiian beliefs, behavior and attitudes?” and “How important is it to you to maintain Hawaiian cultural traditions?” had means of 3.95 and 3.99 respectively. Responses to the item “How much do you value non-Hawaiian beliefs, behaviors and attitudes?” had a mean of 3.40. It is clear that the sample valued Hawaiian beliefs, behaviors and attitudes and maintaining the Hawaiian culture; however, they also valued non-Hawaiian beliefs almost as strongly. This suggests that students may strongly value beliefs, behaviors and attitudes from many different cultures, not just Hawaiian culture. This makes sense, due to the high percentage (73%) of Hawaiians who are mixed race (Kamehameha Schools, 2014). Having strong values, regardless of culture may be the influencing factor, as opposed to ascribing to Hawaiian culture specifically.

Hishinuma et al., (2000) validated the HCS with a sample of Hawaiian and non-Hawaiian adolescents; however, I eventually did not include this scale because of its weak reliability and factor structure. The HCS that I used was developed for adolescents, so its use with college students may have accounted for the lower reliability. Erikson (1968) proposed stages of identity development for adolescence and early adulthood that reflected psycho-social conflicts at each stage of life. According to Erikson, adolescents (ages 13-19) deal with conflicting ideals regarding “identity vs. role confusion.” They develop their identities and are beginning to solidify their ideologies. However, young adults deal with the conflict of “intimacy vs. isolation,” and they focus more on romantic relationships.

More recently, Arnett (2000) identified the “emerging adult” as an intermediate stage, representing a more gradual period that encompasses exploration and changes in world view,

work and love. The emerging adult is characteristically present in industrialized societies, as a result of the opportunities, possibilities and unconfirmed future pathways that need to be negotiated between the ages of 18 and 25. Another characteristic of this stage is the ever-changing demographic status. These individuals live in college housing, work and live on their own or at home, or a combination of these. This may influence their feeling a sense of insecurity. The majority of the Native Hawaiian students in this study (93%) were between the ages of 17 and 29, which generally fits the definition of the emerging adult, proposed by Arnett. My sample being emerging adults and the group Hishinuma et al. (2000) studied being adolescents could explain the differences in reliability of the HCS for this group. Students in this study could have been exploring aspects of their identities that were not addressed in the HCS items. Therefore, the MEIM served as a better measure of Hawaiian identity for this group.

Cultural vs. Racial vs. Ethnic Identity

In addition to the sample of this study being relatively small, the ambiguous results from the HCS and the need to remove of some of the MEIM items might have been related to confusion around interchangeable use of the terms, cultural, racial and ethnic identity. Educational institutions use “ethnicity” to demographically group students and often hold educators accountable for the achievement of different groups of students, based on self-identified ethnicity. The University of Hawai‘i community college (UHCC) system uses ethnicity as a way to group students and assesses success for ethnic groups such as Native Hawaiian, Filipino and Pacific Island students (Morton, 2019). Furthermore, the UHCC system uses these categories to allocate performance-based funding. For example, Kapi‘olani Community College must reach a predetermined goal for Native Hawaiian student enrollment, graduation and transfer in order to receive its annual allocation from UH community college

system. If the goal is not met, funding is not allocated. Other grant funding such as Title III federal funding is based on a percentage of Alaska Native and Native Hawaiian populations in order to determine if an institution is eligible for funding (U.S. Department of Education, 2014).

Phinney and Ong (2007), studied ethnic identity and described it as “many faceted,” deriving “from a sense of peoplehood within a group, a culture, and a particular setting” (p.271). Racial identity can be viewed as blood quantum, phenotypes and even nationalism (Kauanui, 2008; Ledward, 2007), wherein Hawaiians are forced to navigate a complex set of norms. Some feel inadequate as Hawaiians, based on a “racialized checklist” and an invisible “measuring stick” (Ledward, 2007, p. 137) that they impose on themselves, not by choice, but as a result of settler colonialism and oppression of Hawaiians. Ledward (2007) described this best and suggested:

We must actively challenge these discourses whenever we encounter them. As result of a specific and purposeful history, we have unknowingly been equipped with a set of measuring sticks for determining what “a Hawaiian” is or how much “more Hawaiian” one person is over another. (p.137)

With majority of the Hawaiian lāhui, nation, being of part-Hawaiian descent (Kamehameha Schools, 2014), the acknowledgement of multiculturalism is realistic and necessary. Individuals must define identification as a Hawaiian or as a part-Hawaiian, themselves. The measure of Hawaiian identity continues to be problematic in research, as was the case for this study, when self-reported inventories were used to measure complex social constructs.

Relationships between Academic Self-Efficacy and Hawaiian Identity

To my knowledge, the relationship between academic self-efficacy and Hawaiian identity had previously not been researched. Some studies attempted to link the two, by looking at various measures of Hawaiian identity and self-esteem or academic readiness; however, the relationship between these constructs had not been researched directly. I conducted the factor analysis for both constructs, academic self-efficacy and Hawaiian identity, and tested the relationships between all factors. Positive relationships were found between all latent constructs of Hawaiian identity and academic self-efficacy, which supported the hypothesized theoretical model.

As hypothesized, I found that the personal factors of Hawaiian identity and academic self-efficacy were highly positively correlated with each other and that the tested model validated this claim. Takayama and Ledward (2009) studied self-efficacy, culture-based teaching, and Hawaiian identity. They found a relationship between culture-based teaching and Hawaiian identity, but culture-based teaching and self-efficacy were not related. However, Takayama and Ledward's focus was not to test the relationship between Hawaiian identity and self-efficacy. Phinney (1992) found that ethnic identity and self-esteem were correlated among Black, Hispanic and Asian students, while this was not the case for White students. Although this study was not focused on self-esteem, the results of this study, showed significant relationships between identity and self-efficacy, which parallels Phinney's (1992) findings for the aforementioned ethnic groups. Self-efficacy and self-esteem show similar findings when studied, though are contrasted by Bandura (1997) wherein "perceived self-efficacy is concerned with judgments of personal capability, whereas self-esteem is concerned with judgments about self-worth" (p. 11).

The present study found significant relationships between academic self-efficacy factors regarding understanding what students learned, academic skills, study skills and time management, and engaging in classroom activities and Hawaiian identity factors of effort to learn more about their ethnic group and sense of belonging to the group. The results validate the hypothesis that academic self-efficacy and Hawaiian identity, as measured in this study, are related. This can be used a foundation for future research.

Influence of Hawaiian Identity on Academic Achievement

I studied the effects of Hawaiian identity on fall GPA, persistence and grades in English, math, Hawaiian studies and Hawaiian language grades. There were no statistically significant effects of Hawaiian identity on GPA or persistence from the fall to spring semesters. Additionally, there were no significant effects of Hawaiian identity on English, math, Hawaiian studies grades or Hawaiian language grade.

I hypothesized that there would be a positive effect of higher Hawaiian identity on academic achievement. More specifically, I hypothesized that higher scores in Hawaiian identity factors would positively affect Hawaiian studies and Hawaiian language grades. The results revealed that this was not the case. There were no significant effects of Hawaiian identity factors on Hawaiian studies or Hawaiian language grades. This was puzzling to me since, through my work with Hawaiian students, I observed and heard anecdotally, that students enjoyed these classes better than other subjects and stated feeling more comfortable in these classes because they related and knew more about the subjects. When looking at the data collected on the pass rates of these classes, it seems as though the sample of Hawaiian students in this study did fare better in Hawaiian language and studies courses compared to English and math. In fall 2018, 88.8% of students earned a letter grade of A or B in Hawaiian language and only one student

(11.1%) withdrew. In spring 2019, 64.1% earned a passing grade (A, B or C). For Hawaiian studies, in fall 2018, 68.4% earned a passing grade, and in spring 2019, 51.9% earned passed. In comparison, 59.4% and 53.8% in the fall passed English and math respectively, and 27.7% and 32.3%, did so in the spring. It is clear that in this sample, Hawaiian students performed better in Hawaiian language and Hawaiian studies. Although the sample was small, the outcomes of academic performance in these classes were positive. However, small sample sizes also affected the overall model, which may have caused the insignificant results when testing self-efficacy and Hawaiian identity. This will be discussed further in the limitations section.

Although not significant, the reasons for lower grades in English and math could be explained by Kawakami's (1999) "cultural difference model" (p. 23), describing a mismatch between school and home, or previous school experiences or feelings of alienation in a western institution (Barnard, 2004). Hawaiian students may have varied previous learning experiences, some of which were more congruent with traditional ways of learning. These approaches could have included K-12 Hawaiian immersion education or other teaching environments, such as experiential learning, culturally relevant pedagogies or learned language in a home or community setting. Students with prior Hawaiian language knowledge or experience may have found the college classroom setting different from their previous experiences and learning in English challenging. Although some college classrooms have adopted pedagogies that are aligned with traditional ways of teaching, others have maintained Western ways. This incongruence or "mismatch" could be attributed to other environmental or behavioral factors that I did not study.

Although there were no significant direct effects of identity measures on academic performance, there were significant effects of both "effort to learn about the ethnic group" and

“sense of belonging to the ethnic group,” through the academic self-efficacy factor “engaging in classroom activities.” This supports Ka‘anehe’s claim of the importance of relationship building and engagement in classrooms for Hawaiian students (Ka‘anehe, in press). The kumu (teachers) in Ka‘anehe’s (in press) study shared common teaching philosophies of modeling, experiential teaching and learning and teaching “through culture.” Many of the kumu gained their knowledge through learning the “Hawaiian way” and intended to teach the same way. Many did so to honor their kūpuna (elders) and because they believed it was an effective teaching method. Like the Hawaiian ways of teaching described by Ka‘anehe, the higher grades in Hawaiian language and studies in the current study could be related to styles of teaching and curriculum in Hawaiian language and Hawaiian studies, including students working collaboratively with peers and faculty, completing group projects, and seeing Hawaiian faculty as role models. If this is the case, it may be that Hawaiian students do learn better with certain Hawaiian methodologies.

My hypothesis that students with stronger Hawaiian identities would display greater achievement in Hawaiian language and studies classes was not confirmed. There are clearly other variables that contribute to increased achievement in these classes, as measured by grades. Statistically, 88.5% of the variance of the Hawaiian studies grades was not accounted for by the factors of Hawaiian identity or self-efficacy. The large portion of unexplained variance suggests that other factors that contribute to the Hawaiian studies grade were not included in the model. For Hawaiian language, the portion not accounted for in this model was 22.4%, which is not that high. However, the small sample size could account for this. In any case, it is clear that although I attempted to explain academic achievement by measuring Hawaiian identity and self-efficacy, there are other factors, such as SES, family support (Hagedorn et al., 2006) and community

cultural wealth (Sablan, 2019) that are important to include. This is discussed in the limitations section.

Influence of Academic Self-Efficacy on Academic Achievement

Social Cognitive Theory (Bandura, 1995 & 1997) suggests that academic self-efficacy affects academic performance. I studied the effects of academic self-efficacy on fall GPA, persistence and grades in English, math, Hawaiian studies and Hawaiian language grades. I found that one factor, engaging in classroom activities, significantly influenced GPA. Barry and Finney (2009) used the CSEI and found positive correlations between the “course” and “social” domains and term GPA. The course domain of the CSEI aligned with the factor labeled in this study, academic skills, study skills and time management, with items such as “manage time effectively,” “take good class notes,” and “do well on exams.” The social domain of the CSEI aligned with the factor labeled in this study, engaging in classroom activities, with items such as “Ask questions in class,” and “talk to professors.” I found that efficacy for engaging in classroom activities had a significant effect on GPA, while efficacy in academic skills, study skills and time management did not. This suggests that social support and relationship building could be important.

Establishing relationships early, integrating students into the institution, peer connections, collaborative learning, community engagement and mālama or care for students are referenced in the literature as promoting improved learning and as retention strategies (Tinto, 1987; Loes, An, Saichaie &, 2017; Ka‘anehe, in press). Tinto (1987) outlined the importance of integrating students into the institutional culture to support their retention. However, Tierney (1992) criticized Tinto’s theory for its use of the term “assimilation,” making it only partially relevant to American Indian or Alaska Native students. Although Tinto’s theory points to the importance of

institutional culture or community, the model does not include other types of engagement that may be important for indigenous students.

Lopez (2018) highlighted family support through encouragement, institutional support in forms of student and community support and values of “giving back” (Lopez, 2018; Reyes, 2019) as forerunners to increased academic achievement. Sablan (2019) applied Critical Race Theory to validate community cultural wealth. She showed that four scales: aspirational, familial, navigational and resistant capital had statistically high reliability. Ka‘anehe (in press) highlighted the values of *mālama*, through building rapport and relationships, as foremost in teaching and learning. Increased civic and community engagement as well as engaging in non-academic activities, such as working on campus also increased college retention (Newell, 2014; Witkow, Gillen-O’Neel & Fuligni, 2012) Makuakane-Drechsel and Hagedorn (2000) studied similar variables affecting retention at four Hawai‘i community colleges in the early 1990s for Native Hawaiian students and found that average credit hours, financial aid and cumulative GPA significantly predicted retention or reenrollment. They suggested further research to include engagement factors such as joining clubs and interacting with faculty members, which I attempted to do.

I hypothesized that there would be a positive effect of higher Hawaiian identity on Hawaiian studies and Hawaiian language grades, which was not found, however, I did find that two academic self-efficacy factors, “understanding what you learned,” and “academic skills, study skills and time management,” had positive significant effects on Hawaiian language grade. A students’ belief in their ability to understand and use academic, study skills increased their grade in Hawaiian language. This was interesting to me, since it was only true for Hawaiian language. It is important to note that data was collected prior to students taking any college

classes, at the new student orientation. Therefore, the responses were based on students' previous experiences in school. It is possible that students' efficacy in "understanding what I learned" was based on their previous experiences. If this is true then it would lend credence to my argument that students who had culturally congruent experiences performed better in Hawaiian language. "Understanding what I learned," would explain that for this subject. The insignificance of this factor with English, math and Hawaiian studies grades could be an extension of the mismatch between college pedagogies and K-12, immersion, community or family ways of teaching. Although the content of Hawaiian studies differs from English and math, the pedagogies in all of these classes may have been considered to be incongruent with Hawaiian ways of learning.

Limitations and Future Research

Sample size. Although the model fit was acceptable, a larger sample is needed to test the influence of the model on specific class grades. For the model fit and testing the relationships between Hawaiian identity and academic self-efficacy and its influence on general academic performance, the sample results appeared acceptable. Because the research required grades at the end of each semester for specific courses, the sample size varied based on course enrollment affecting the results. First year best practices across the nation include taking a math and English in students' first semester or year of college (Howell, Kurlaender, & Grodsky, 2010; Complete College America, 2019) to promote future college success. Registration advising for first-year students at Kapi'olani Community College follows this best practice, such that advisors recommend registration in math and English. Because of this, students enrolled in English and math classes at higher rates during their first year. Hawaiian studies and language are chosen based on the major or interest of students. Since there is no way to predict enrollment in these

classes, collecting data over a longer time period, three to four years, would ensure larger sample sizes in those classes.

As discussed in previous sections, the small sample size for the Hawaiian language (n=20) and Hawaiian studies courses (n=29) may have affected the results of the study. Although there were significant results reported, they could be an anomaly. For this reason, discussion related to the passing grades was important to note and can inform further research and improved data collection.

Additionally, an exploratory factor analysis (EFA) was needed to test the factor structure for the scales used on this population, which had not been done previously. General guidelines (Bandalos & Finney, 2010) state that EFA should be completed first with an independent sample, prior to completing confirmatory factor analyses (CFA) and Structural Equation modeling. In this study, due to the small sample and time limitations, the same data set was used for both EFA and SEM analyses. In the future, a different data set should be used. This study can serve as the foundation for future research.

Hawaiian identity. As discussed previously, measurement of Hawaiian identity was a challenge. With constant conflict of identity and racial ambiguity (Borrero et al., 2012) among the Hawaiian population, measuring it remains problematic and sometimes unreliable. Sablan (2019) critically examined the intersection between indigenous methodologies and quantitative analyses, using a “critical-quantitative” approach. In reviewing the literature, I found that qualitative studies were common approaches to indigenous educational research. Very few researchers utilized quantitative methods, and if they did, these studies did not seem to appropriately address factors related to education for indigenous students. Sablan operationalized the use of Critical Race Theory and quantitative methods for community cultural wealth. Her

application is powerful, allowing for a more relevant measurement of community cultural wealth by creating, validating and testing reliability of scales, which address the previous deficit-based forms of measurement. Sablan surveyed and interviewed students and consulted with cultural experts to define latent constructs and applied a factor analysis to validate the factors. In the implications for policy and practice section, recommendations will be discussed.

Bandura's triadic reciprocal causation. This study aimed to measure Hawaiian identity and academic self-efficacy, representing the “personal factors” piece of the triad. The unexplained variances of GPA (.929) and PER (.968) suggest that a substantial amount of the variances of outcomes was accounted for by other variables. Given these results, self-efficacy and Hawaiian identity together, as measured in this study only made up 19.8% and 11.1% of the variance of GPA and PER, respectively. The majority, .929 and .968 of GPA and PER were attributed to other variables. Looking back at the Triadic Reciprocal Causation (Bandura, 1986), it would be reasonable to assume that the environmental and behavioral variables made up substantial portions of that difference.

My intent to measure the personal variables of Hawaiian identity and self-efficacy without environmental and behavioral variables was based on the reality that there was little previous research on the personal factors defined in his study. However, there was research that identified variables that affect Native Hawaiians in community colleges, such as SES, financial support, help-seeking, family engagement and support, institutional support, community engagement, giving back and rejection of dominant frameworks and institutionalized racism (Hagedorn et al., 2006; Lopez, 2018; Reyes, 2019; Sablan, 2019).

In order to comprehensively study Bandura's model, all factors should be included. Socio-economic status, financial support, family engagement, and institutional racism as

environmental factors, and engagement, effort and seeking help as behavioral factors should be added, along with the personal variables from this study, to the model. Hagedorn et al. (2006), measured SES, financial support and family engagement and the CASES or CSEI assumed measurement of help seeking behaviors through items that ask about asking for help when needed. Like Sablan's (2019) use of critical race theory to improve scale development for community cultural wealth, I further the recommendation, to better study the variables that affect academic achievement of Native Hawaiian students. In addition to completing Bandura's triad, I suggest improving the development of the scales for all variables. For native populations, use of dominant theories, previously validated scales and quantitative methods, could invalidate research. Because quantitative methodologies are based upon group and summary statistics, applying statistical and causal inferences, they could be inappropriate for Native populations that have non-majoritarian experiences in education. Measuring constructs through surveys, inventories and scales that were previously validated should be re-validated using other methods. Applying Critical Race Theory to explore relevant constructs such as identity and efficacy could improve the identification, cultural relevance and validity of constructs. Critical Race Theory can be a foundation for future research to help us critically analyze measurement and research methods.

Implications for Policy and Practice

Measuring Hawaiian identity. Developing and testing Hawaiian identity scales is imperative to future research. Understanding the underlying effects of historical and institutional racism and oppression influencing the success of Hawaiian students in higher education needs attention. I believe that there are two crucial aspects to future quantitative research. First, there is a need to develop relevant scales for measuring the construct of Hawaiian identity. Second, there

is a need to measure the degree to which individuals identify as Hawaiian. Like Sablan's (2019) use of Critical Race Theory in community cultural wealth scale development, a similar method could be applied to identity. Approaching the scale and measurement development of identity using a critical race approach, can accomplish similar goals that qualitative methods do by examining counterstories and non-majoritarian narratives. The low reliability of the HCS in this study indicates a need to further development of a scale for this purpose. Additionally, the measure should consider the degree to which a student identifies as Hawaiian, and how that influences their behaviors and actions. Understanding one's identification as Hawaiian can be enhanced when coupled with the behaviors that drive actions. Study of these relationships could add a great deal to the identity construct.

Phinney and Ong (2007) asked survey completers to choose their ethnicity from a group of options prior to complete the MEIM. This allowed the individual to select which ethnicity they most identified. In this research, I asked participants to answer the MEIM and HCS items relevant to their Hawaiian ethnicity. I assumed that these students identified ethnically as Hawaiian. Students were chosen for this study by their response to two questions on the admissions application, "ethnicity" and "legacy." The "ethnicity" question asked students to "select one or more of the following races" from a list of ethnicities. The "legacy" question asked applicants to check "yes" or "no" for the question "Were any of your ancestors Hawaiian?" Both questions categorized these students as "Hawaiian" in the eyes of the college and subsequent data were based on these questions alone. However, I assumed that the students in this category were culturally Hawaiian, when in fact they may have identified as Hawaiian either racially, ethnically or culturally, a combination of the three, or not at all.

Additionally, honoring an individual's multiculturalism adds to this recommendation for measuring the degree to which one identifies to each of their ethnicities. Asking students to self-identify their multiple ethnicities and rate their identification to each of those ethnicities, would help gain a better understanding of the individual. In order to get an accurate measure of one's Hawaiian identity, ignorance of others cannot be expected. Holt (1975) states this best,

We grew up, deeply respecting our bicultural heritage. I was made aware of my aboriginal origins as I was the others which were: Corsican, Spanish, American and British...I am, in depth a product of Hawaii —an American, yes, who is a citizen of the fiftieth state, but I am also a Hawaiian somewhat by blood, and in large by sentiment. Of this, I am proud (p.11).

Asking students to describe who they are and how they identify seems to be the most direct and straightforward attempt to tackle this issue. Establishment of a continuum would best be used for analysis with prediction of academic achievement. Only using the marker of Hawaiian as an ethnicity does not tell the whole story.

Revising assessment and measures of success for Hawaiian students. In the University of Hawai'i community college system, academic achievement measures are based on demographic questions such as ethnicity and Hawaiian legacy. The assessment of program outcomes and college performance-based funding rely on these demographics. Measurements of success are also based on academic achievement measures such as grades, retention, transfer and graduation. In a system claiming to be an indigenous serving institution (Hawai'i Papa O Ke Ao, 2020), tying funding allocated to helping support Native Hawaiian students to Western measures of academic achievement seems counterproductive. Other measures of success should be considered in allocating funds to programs or campuses. Penalizing programs and campuses,

when Native Hawaiian students do not meet the academic achievement measures, perpetuates and promotes the institutionalized colonial mindset. I have two recommendations to mitigate these negative effects. First, there is a need to reconsider performance-based funding that rely on the ethnicity and legacy questions solely. Colleges should consider redefining the group by ethnicity, legacy, SES, and other identity factors as defined in this study. Second, colleges should define success through more cultural measures such as connection to the community, established relationships and defying stereotypes, which can also contribute to retention.

Reyes (2019) examined the phenomenon of “giving back” and urged alternate definitions of success for individuals and communities. She stated:

If higher education institutions understand giving back to be a strength among Native peoples, they should recognize it as a form of merit alongside other predominantly used indicators of academic merit, such as grade point averages and test scores If institutions were to choose to invest in those who display nation-building merit, they would also invest in decolonization and the betterment of Native nations (p.631).

Kaomea (2015), suggested that different tools of analysis are needed to reveal different or counter-stories of our people, which ultimately lead to liberation from oppressed histories and stories. She highlighted an assignment in her class, in which students were asked to apply various tools to reveal such counter-stories. As a student in her class, I did just that. I revealed a counter narrative of a student who showed success through accomplishment of his goals. At first glimpse, the student’s transcript showed failed grades and non-persistence. However, by looking at the student’s “education plan,” which he wrote as a part of our introduction to college course, he outlined his goal of working with “at-risk” youth in his community. I saw him later, when he visited campus, for work. He shared that he accomplished his goal and was on campus bringing

“at-risk” students to introduce them to higher education. Although he did not graduate, he still valued his experiences, which helped him to achieve his goal. This example can serve as a model for alternate measures of success for our Native populations. Asking students what their goals are, recording them, and revisiting them over time can help shift the narrative that Native Hawaiian students perform lower than any other ethnic group, to one of hope and success.

Defining and measuring success in cultural ways will take time and collaboration, while a more challenging task will be finding ways to collect data. In any case, the additional success measures would enhance the outlook, promote decolonization and improve social justice of Native Hawaiian student success in higher education.

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Appendix A

The Multigroup Ethnic Identity Measure (MEIM)

The MEIM was originally published in the following article:

Phinney, J. (1992). The Multigroup Ethnic Identity Measure: A new scale for use with adolescents and young adults from diverse groups. Journal of Adolescent Research, 7, 156-176.

It has subsequently been used in dozens of studies and has consistently shown good reliability, typically with alphas above .80 across a wide range of ethnic groups and ages. On the basis of recent work, including a factor analysis of a large sample of adolescents*, it appears that the measure can best be thought of as comprising two factors, ethnic identity search (a developmental and cognitive component) and affirmation, belonging, and commitment (an affective component). Two items have been dropped and a few minor modifications have been made. Attached is the current revision of the measure, without the measure of Other-group orientation. The two factors, with this version, are as follows: ethnic identity search, items 1, 2, 4, 8, and 10; affirmation, belonging, and commitment, items 3, 5, 6, 7, 9, 11, 12. (None of the items are reversed.) The preferred scoring is to use the mean of the item scores; that is, the mean of the 12 items for an over-all score, and, if desired, the mean of the 5 items for search and the 7 items for affirmation. Thus the range of scores is from 1 to 4.

The suggested ethnic group names in the first paragraph can be adapted to particular populations. Items 13, 14, and 15 are used only for purposes of identification and categorization by ethnicity.

The Other-group orientation scale, which was developed with the original MEIM, is not included, as it is considered to be a separate construct. It can, of course, be used in conjunction with the MEIM.

Translations of the measure into Spanish and French now exist and are available, but we currently have no information on their reliability.

No written permission is required for use of the measure. However, if you decide to use the measure, please send me a summary of the results and a copy of any papers or publications that result from the study.

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In this country, people come from many different countries and cultures, and there are many different words to describe the different backgrounds or ethnic groups that people come from. Some examples of the names of ethnic groups are Hispanic or Latino, Black or African American, Asian American, Chinese, Filipino, American Indian, Mexican American, Caucasian or White, Italian American, and many others. These questions are about your ethnicity or your ethnic group and how you feel about it or react to it.

Please fill in: In terms of ethnic group, I consider myself to be _____

Use the numbers below to indicate how much you agree or disagree with each statement.

(4) Strongly agree (3) Agree (2) Disagree (1) Strongly disagree

- 1- I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.
- 2- I am active in organizations or social groups that include mostly members of my own ethnic group.
- 3- I have a clear sense of my ethnic background and what it means for me.
- 4- I think a lot about how my life will be affected by my ethnic group membership.
- 5- I am happy that I am a member of the group I belong to.
- 6- I have a strong sense of belonging to my own ethnic group.
- 7- I understand pretty well what my ethnic group membership means to me.
- 8- In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.
- 9- I have a lot of pride in my ethnic group.
- 10- I participate in cultural practices of my own group, such as special food, music, or customs.
- 11- I feel a strong attachment towards my own ethnic group.
- 12- I feel good about my cultural or ethnic background.
- 13- My ethnicity is
 - (1) Asian or Asian American, including Chinese, Japanese, and others
 - (2) Black or African American
 - (3) Hispanic or Latino, including Mexican American, Central American, and others
 - (4) White, Caucasian, Anglo, European American; not Hispanic
 - (5) American Indian/Native American
 - (6) Mixed; Parents are from two different groups
 - (7) Other (write in): _____
- 14- My father's ethnicity is (use numbers above)
- 15- My mother's ethnicity is (use numbers above)

Appendix B

Hawaiian Cultural Scale (HCS)

HAWAIIAN CULTURE SCALE—ADOLESCENT VERSION

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Appendix

Hawaiian Culture Scale—Adolescent Version

We would like you to answer the following items on Native Hawaiian culture and ethnicity.

Item 1. I learned about the Native Hawaiian way of life from my family at home.
Not at all 1 2 3 4 5 Very much
Somewhat

Item 2. I learned about the Native Hawaiian way of life from school.
Not at all 1 2 3 4 5 Very much
Somewhat

Item 3. I learned about the Native Hawaiian way of life from friends and neighbors.
Not at all 1 2 3 4 5 Very much
Somewhat

Item 4. Check anyone in your household who can carry on a conversation in Hawaiian:
____ Yourself
____ Mother (primary female caregiver)
____ Father (primary male caregiver)
____ Grandmother
____ Grandfather
____ Other _____
____ None (specify)

Item 5. What language is primarily spoken in your home?:
____ Standard English
____ Pidgin English
____ Hawaiian
____ Other _____
(specify)

Item 6. Rate your ability to *understand* the Hawaiian language (circle one).
Not at all 1 2 3 4 5 Excellent
Pretty good

Item 7. Rate your ability to *speak* the Hawaiian language (circle one).
Not at all 1 2 3 4 5 Excellent
Pretty good

Item 8. How much do you value Hawaiian beliefs, behaviors and attitudes? (circle one)
Not at all 1 2 3 4 5 Very much
Somewhat

Item 9. How much do you value Non-Hawaiian beliefs, behaviors and attitudes? (circle one)
Not at all 1 2 3 4 5 Very much
Somewhat

Item 10. How important is it to you to maintain Hawaiian cultural traditions?
Not at all 1 2 3 4 5 Very much
Somewhat

Item 11. Do you have any Hawaiian blood?
____ Yes
____ No
____ Don't know

If you answered *yes* above, select the *one* choice below that describes you:
____ Pure (100%) Native Hawaiian
____ Half (50% or more) Native Hawaiian
____ Less than half (less than 50%) Native Hawaiian

(Appendix continues)

Please read these instructions. For each of the items, circle the number which best describes you. For example, look at the first item under Customs. If you are unfamiliar with or don't know about family home blessings by a Hawaiian priest or *kahuna*, circle the number 1. If you understand or believe in such blessings, then circle the number 2. If, in addition to understanding or believing in this custom, you also practice, or do the custom then circle number 3. Answer the remaining items in the same way.

Customs & Beliefs:	Unfamiliar/don't know	You understand or believe in	You practice custom
1. Family home blessed by Hawaiian priest or <i>kahuna</i>	1	2	3
2. Taking part in Native healing practices (<i>ho'oponopono</i> , <i>lomilomi</i>)	1	2	3
3. Offerings at <i>heiau</i>	1	2	3
4. <i>Aumakua</i>	1	2	3
5. <i>Kapu</i> System	1	2	3
6. Learning genealogy/origin of family	1	2	3
7. Formal passing of knowledge from generation to generation	1	2	3
8. <i>Hō'ailona</i> —signs of nature	1	2	3
9. <i>Lōkahi</i>	1	2	3
10. <i>'Ohana</i>	1	2	3
11. <i>Aloha 'āina</i>	1	2	3
Lifestyles:	Unfamiliar/don't know	You know how to do	You do
1. Net fishing	1	2	3
2. <i>Taro</i> farming	1	2	3
3. <i>Limu</i> picking	1	2	3
4. <i>'Opēlu</i> fishing	1	2	3
5. Trolling	1	2	3
6. Making <i>poi</i>	1	2	3
7. Drying fish	1	2	3
8. Hunting	1	2	3
Activities & Social Events:	Unfamiliar/don't know	You know how to do	You do
1. <i>Hula</i>	1	2	3
2. Chanting/playing music	1	2	3
3. Listening to Hawaiian music	1	2	3
4. Listening to Hawaiian radio stations	1	2	3
5. Merry Monarch	1	2	3
6. Hawaiian clubs	1	2	3
7. Canoe paddling	1	2	3
8. <i>Lei</i> making	1	2	3
9. Hawaiian crafts	1	2	3
10. Baby <i>lū'au</i>	1	2	3
Folklore & Legends:	Unfamiliar/don't know	You understand	You believe in
1. Nightmarchers	1	2	3
2. <i>Menehunes</i>	1	2	3
3. <i>Pele</i>	1	2	3
4. <i>Ti</i> leaf as protection	1	2	3
5. <i>Kahuna</i>	1	2	3
Causes—Locations:	Unfamiliar/don't know	You know about	You believe in or support
1. <i>Waiahole/Waikane</i>	1	2	3
2. <i>Waimānalo</i> Beach	1	2	3
3. Sand Island	1	2	3
Causes—Access:	Unfamiliar/don't know	You know about	You believe in or support
1. Access rights to the ocean	1	2	3
2. Access rights to the mountains	1	2	3

Definition and Description (from Pukui & Elbert, 1986, unless otherwise indicated):

Customs & Beliefs:

Kahuna = Hawaiian priest

Ho'oponopono = family conferences in which relationships were set right through prayer, discussion, confession, repentance, and mutual restitution and forgiveness

Lomilomi = to rub, press, squeeze, crush, mash fine, knead, massage, rub out; to work in and out (in the context of this study, a therapeutic massage—based on authors' knowledge)

Heiau = Pre-Christian place of worship, shrine

Aumakua = family or personal gods, deified ancestors who might assume the shape of certain animals, plants, or things

Kapu = taboo, prohibition; special privilege or exemption from ordinary taboo; sacredness; prohibited, forbidden; sacred, holy, consecrated; no trespassing, keep out

Hō'ailona = sign, symbol, representation

HAWAIIAN CULTURE SCALE—ADOLESCENT VERSION

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Lōkahi = unity, agreement, accord, unison, harmony

'Ohana = family, relative, kin group; related

Aloha 'āina = love of the land or of one's country, patriotism

Lifestyles:

Taro (kalo in Hawaiian) = a kind of aroid cultivated since ancient times for food, spreading widely from the tropics of the Old World; in Hawaii, *taro* has been the staple from earliest times to the present, and here its culture developed greatly, including more than 300 forms

Limu = a general name for all kinds of plants living under water, both fresh and salt

'Opēlu = mackerel scad

Poi = Hawaiian staff of life, made from cooked *taro* corms, or rarely breadfruit, pounded and thinned with water

Activities & Social Events:

Hula = the *hula*, a *hula* dancer, to dance the *hula*

Merry Monarch = commemoration festival for King *Kalākaua*

Lei = garland, wreath; necklace of flowers, leaves, shells, ivory, feathers, or paper; given as a symbol of affection

Baby *lū'au* = Westernized version of Hawaiian tradition of celebrating the first year of life (based on authors' knowledge)

Folklore & Legends:

Nightmarchers = spirits of departed chiefs who march on the 27th night of the lunar month; people in the pathway might be killed (based on Pukui, Haertig, & Lee, 1972a)

Menehunes = legendary race of small people who worked at night, building fish ponds, roads, temples; if the work was not finished in one night, it remained unfinished

Pele = volcano God

Ti (*kī* in Hawaiian) = a woody plant in the lily family, native to tropical Asia and Australia; the leaves were put to many uses by the Hawaiians, as for house thatch, food wrappers, *hula* skirts, sandals

Kahuna = Hawaiian priest

Causes—Locations:

Waiahole/Waikane = location on the East side of the island of *Oahu* with issues of land and water rights (based on authors' knowledge)

Waimānalo Beach = location on the East side of the island of *Oahu* with issues of land rights (based on authors' knowledge)

Sand Island = location on the South side of the island of *Oahu* with issues of land and fishing rights (based on authors' knowledge)

Causes—Access:

Access rights to the ocean = to gather traditional shells, fish, and seaweed (based on authors' knowledge)

Access rights to the mountains = to gather traditional herbs and plants; to worship at sacred sites (based on authors' knowledge)

Subscale Scoring Key:

Subscale	Score formula	Range
Customs	Mean of available responses from the 11 items	1 to 3
Lifestyles	Mean of available responses from the 8 items	1 to 3
Activities	Mean of available responses from the 10 items	1 to 3
Folklore	Mean of available responses from the 5 items	1 to 3
Causes—Locations	Mean of available responses from the 3 items	1 to 3
Causes—Access	Mean of available responses from the 2 items	1 to 3
Language Proficiency	Mean of available responses from the 2 items	1 to 5 ^a
Overall Subscale Score	Mean of available subscale means	1 to 3 ^b

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^a From Items 6 and 7. ^b With the Language Proficiency subscale mean rescaled to range from 1 to 3 prior to calculating the overall subscale mean score, as follows: Rescaled Language Proficiency = $1 + (x - 1)/2$ (where $x = 1$ to 5 mean rating).

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Appendix C Consent to Participate

Aloha! My name is Michaelyn Nākoa and you are invited to take part in a research study. I am a doctoral student at the University of Hawai'i at Mānoa in the Department of Educational Psychology. As part of the requirements for earning my doctoral degree, I am doing a research project. The purpose of my project is to explore the relationships between Hawaiian Identity, Self-efficacy and your performance during the first year in community college. I am asking you to participate because you indicated that you are of Hawaiian ancestry on your application and you will be a first year student enrolled at a community college in the University of Hawai'i system.

Project Description – Activities and Time Commitment: If you decide to take part in this project, you will be asked to fill out a survey. The survey questions are mainly multiple choice. However, there will be a few questions where you may add an open-ended response. The survey is accessed immediately after this page. Completing the survey will take approximately 10 minutes. Once you take that survey, your responses will be linked to your grades in English, Math, Hawaiian language and/or Hawaiian studies if you take those courses, during the first year that you are enrolled at your college. Your identity will be masked using fake id numbers so that I will not be able to link your grades to you. I expect around 250 students will take part in this project.

Benefits and Risks: There will be no direct benefit to you for taking part in this project. The findings from this project may help create a better understanding of first time community college students of Hawaiian ancestry. There is little to no risk to you for participating in this project.

Confidentiality and Privacy: Any personal information, such as your name or address will be collected as demographic information and viewed only by me, the researcher. I used your "hawaii.edu" email to send you the survey link and to obtain your grades. Once grades are obtained, fake id numbers will be used.

Voluntary Participation: You can freely choose to take part or not to take part in this survey. There will be no penalty or loss of benefits for either decision. If you do agree to participate, you can stop at any time.

Questions: If you have any questions about this study, please call or email me at (808) 734-9700 or mnakoa@hawaii.edu. You may also contact my advisor, Dr. Lois Yamauchi, at (808) 956-4385 or yamauchi@hawaii.edu. You may contact the UH Human Studies Program at (808)956-5007 or uhirb@hawaii.edu to discuss problems, concerns and questions; obtain information; or offer input with an informed individual who is unaffiliated with the specific research protocol. Please visit <https://www.hawaii.edu/researchcompliance/information-research-participants> for more information on your rights as a research participant.

To Access the Survey: Please continue to the next page for instructions for completing the survey. Going to the first page of the survey will be considered as your consent to participate in this study.

If you participate, a copy of this will be sent to your Hawaii.edu email address for your records.

Mahalo!