

Mohala i ka wai: Cultural Advantage as a Framework for Indigenous Culture-Based Education and Student Outcomes

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The framework of cultural advantage calls researchers and leaders to reexamine the structures, paradigms, and practices of effective education. We argue that the moral imperative in this challenge is to critically scrutinize and counter the way education systems perpetuate systematic inequities in opportunities and outcomes afforded to certain groups in society, in effect curtailing cultural and linguistic diversity and innovation. Our findings from research conducted in Hawai'i indicate that learners thrive with culture-based education (CBE), especially Indigenous students who experience positive socioemotional and other outcomes when teachers are high CBE users and when learning in high-CBE school environments. Educational progress will come from forward-oriented research and leadership that embraces the cultural advantages of students with diverse experiences of racism, poverty, cultural trauma, and oppression. By cultivating culturally vibrant and affirming learning environments in lieu of "one-size-fits-all" approaches, educators honor assets found in Indigenous knowledge, values, and stories as models of vitality and empowerment for all.

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Each year, schools across the state of Hawai'i celebrate an event called May Day on May 1. At its best, the "show" is a beautiful pageantry of colors, flowers, and music representing the eight largest islands; graceful hula dances by a "Native" queen and her royal court; accompanied by a medley of songs and narrated activities of a Hawaiian kingdom and its villagers. May Day is fun and festive, although found nowhere within the Indigenous culture it seeks to celebrate. It was actually the brainchild of Oklahoma-born Don Blanding who moved to Hawai'i in 1915 and proposed a holiday celebrating the wearing of flower *lei* in the early 1920s. Today, this version of Hawaiian culture has become a standard feature of "culturally sensitive" education in most schools throughout the state. An important question to analyze is to whom is it culturally sensitive?

Situated within the Indigenous perspectives of the first two authors, this article proposes a critical reframing of education shaped by the broader social justice research and scholarship we share as co-authors. Our call for equity challenges educators and policymakers around the globe to reexamine educational paradigms and practices from the standpoint of Indigenous and minoritized populations who differ both linguistically and culturally within Western-based power structures. The moral imperative in this challenge is to reflect on and change the way conventional education systems stymie cultural and linguistic diversity and innovation. A hundred years of hindsight demands that we recognize and counter how schools perpetuate systematic inequities in opportunities, outcomes, and power afforded to certain groups in society. Proactively privileging and embracing the multicultural and multilingual realities of a new social milieu in local and global contexts can stimulate a highly significant inflection point for education in the next century.

Returning to examine more closely the May Day example, cultural sensitivity masks remarkable insensitivity if one considers the impact of portraying the Hawaiian Kingdom as child's play that ignores the actual coup d'état experienced by the last monarch after American businessmen imprisoned the Queen in the royal palace. Participants miss the untold story that nearly every Native Hawaiian adult alive signed a petition against U.S. annexation in 1898 (Silva, 2004) and the bewilderment of Indigenous families seeing a parody of their culture treated as if it no longer exists. The stereotyped image reified each year, of primitive villagers dancing and singing, ironically is packaged as the happiest paradise on earth, seemingly blind to how Hawai'i's Indigenous people came to struggle disproportionately with poverty, illness, homelessness, and poor educational outcomes in their homeland. These realities are jarring, prompting the first author's young

daughter to independently boycott May Day in open rejection at her new school despite considerable pressure to participate.

Annually performing this erasure of experience and knowledge is paramount to epistemological annihilation (King, 2015). Although often a loving celebration cherished by many, examining May Day through an Indigenous lens exemplifies a broader challenge to the field of education to critique “the way things are.” For example, Kaomea (2003) suggests “defamiliarizing” techniques employed by critical theorists to expose the erasure of pain and resentment and reveal the silencing of Native Hawaiian perspectives in a seemingly benign educational program. Exposure and critique are necessary preconditions for change. This Centennial Issue marks a pivotal time for leadership, innovation, and action based on research showing the positive impact of pedagogy that activates students’ cultural knowledge, experiences, and performance styles as advantages rather than deficits while validating Indigenous experiences with racism, poverty, and cultural trauma.

This article first outlines an Indigenous theoretical framework of cultural advantage within the context of broader sociopolitical forces. We then discuss critical advances in the recent culture-based education (CBE) literature and briefly overview the Hawaiian Indigenous context before presenting our study findings with reinforcing examples. Our research explores teachers’ use of CBE approaches in their daily practice across a range of public and private schools in Hawai‘i. We then examine how teachers’ use of CBE influences students’ college aspirations, sense of belonging to school, self-efficacy, cultural affiliation, and connection to community, which are outcomes that support student success in academics and beyond (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011).

Three significant implications derive from the results linking Indigenous CBE to student outcomes. First, the direction of the relationship is positive among youth from communities experiencing generations of the opposite, providing a strong rationale for educational policymakers and programs to deepen current CBE scholarship and practice beyond celebrations of contrived cultural holidays. Second, this strengths-based approach is valuable to educational practitioners, programs, and policymakers seeking to eliminate enduring achievement disparities for Indigenous and other sociolinguistic minority students. Further research investments are needed to inform future directions (Sleeter, 2012). Third, important implications emerge for contemporary nation states struggling with issues of cultural diversity. Specifically, we argue that it *is* possible to simultaneously embrace unity and diversity on the basis of equality through educational approaches that support cultural integrity and participatory engagement of cultural-linguistic minority communities. Forward-oriented research and leadership in education are needed to intervene where one-size-fits-all approaches privileging Western epistemic and cultural traditions have failed in this emancipatory purpose.

Cultural Advantage as a Theoretical Framework

“Flipping the narrative,” as in the May Day example, is a tool used in Indigenous critical pedagogy to interrogate the status quo (Grande, 2008; Kaomea, 2003). Rooted in critical theory and pedagogy (Apple, 2013; Giroux, 2011), Indigenous critical theory unveils the seemingly invisible power relations at work within education, but from an Indigenous frame of deepened inquiry centered on community, self-determination, and sovereignty (Brayboy, 2005; Goodyear-Ka'ōpua, 2013). Reversing the Western gaze offers a lens to challenge conventional educational approaches that erase the lives of some and privilege others and also to position Indigenous ways of knowing and being as cultural advantages rather than deficits.

Cultural advantage is a highly valuable educational framework for Indigenous peoples across the globe seeking to redress significant social injustices experienced through colonization. The United Nations (2009) counts more than 370 million peoples in 90 countries that are

Indigenous on account of their descent from the populations which inhabited the country, or a geographical region . . . at the time of conquest or colonization or the establishment of present state boundaries and who irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions. (International Labour Organization, 1989, Article 1)

In Indigenous experiences, schooling systems have deployed colonizing and assimilationist policies designed to eradicate Indigenous cultures and languages, systematically marginalizing the identities of Indigenous children in the name of progress (Benham & Heck, 1998; Lipka, 2002; Lomawaima & McCarty, 2006; Ogbu, 1982; Skutnabb-Kangas & Dunbar, 2010; Wilson & Kamanā, 2006).

Contrasting the harmful policies and approaches of earlier agendas, Indigenous culture-based education aims to build on and enhance the linguistic, cultural, cognitive, and affective strengths possessed by Indigenous students. CBE often includes efforts to revitalize languages, knowledge, practices, and beliefs lost or suppressed through colonization or occupation (Demmert & Towner, 2003). These approaches are consistent with the concept of cultural advantage, revealing “funds of knowledge” where others have only seen deficits (González, Moll, & Amanti, 2005). Reframing Indigenous identities as cultural advantage creates counterhegemonic opportunities by giving voice to the expertise of elders and other cultural sources of community, familial, and individual strengths.

In this vein, Kana'iaupuni (2004) challenges communities to name, conceptualize, and narrate these advantages using Indigenous languages, stories, and values. Yosso's (2005) model of community cultural wealth

identifies the significant cultural assets available to students of color, (re)framed as linguistic, familial, and resistant capital. Goodyear-Ka'ōpua's (2013) model of sovereign pedagogy in an Indigenous public charter school in Hawai'i provides a living example of cultural advantage used as an educational framework to guide how students see themselves as change agents in present-day political, media, and community contexts. Cultural advantage drives intentionality, prompting educators to move beyond May Day-like performances because "when we invest our multicultural energies in surface-level cultural exchanges, fantasies of color-blindness, or celebrations of white-washed heroes while ignoring the actual inequities many of our students face, we demonstrate an implicit complicity with those inequities" (Gorski & Swalwell, 2015, p. 40).

Sociopolitical Context

Indigenous CBE sees educational systems embedded within broader sociopolitical contexts, where culture and identity occupy contested terrain in the politics of European and U.S. nationalism. Institutionalizing a single common language and culture is a recognized tool of those in power. Mass education plays a critical role, significantly differentiating the experiences of those living the drama by prescribing the dominant group's language and culture as the script for all groups while delegitimizing and marginalizing potentially competing languages and cultures (Goodyear-Ka'ōpua, 2013; Kana'iaupuni & Ledward, 2013; Spring, 2016). The process is insidious, and oftentimes people forget (or dismiss) that what is considered knowledge in modern societies and how it is transmitted can vary considerably among cultural groups. Staurowsky's (2007) research examines how these tensions play out in national debates over the use of respected American Indian icons as mascots in sports, ironically occurring within the very institutions purporting to educate American Indian students to fully participate in the modern world.

Much can be gained when educators challenge institutions, seeking greater diversity of knowledge (Apple, 2013). Multicultural education became widely accepted in the 1990s throughout the United States and other Western countries, albeit not without challenges (Glazer, 1997). Continued resistance reflects the tug of national cohesion and hegemony against cultural and linguistic pluralism, known as the "pluralist dilemma" (Bullivant, 1981; May, 2014).

Political answers to this dilemma contrast corporate pluralism, which allocates economic, social, and political awards to minority groups based on size and influence, to liberal pluralism, under which no national or ethnic minority group possesses separate standing before the law. Most nations champion the latter. Efforts to protect minority cultures are often portrayed as "irremediably unjust, a disguise for creating or maintaining . . . ethnic

privilege” (Kymlicka, 1989, p. 4; see also May, 2014). Cosmopolitanism advocates also argue for a global citizenry, spurred by increasing transnationalism and standardization of experiences (Nussbaum, 1997). In effect, these forces create pressure to universalize identity, threatening local diversity.

In Indigenous experiences, concepts such as civism and cosmopolitanism raise critical questions about profound social inequities perpetuated by education policies supposedly in service to the common good (Wallerstein, 1996). Both ignore structural barriers confronting cultural-linguistic minority students who are routinely denied access to elite academies, influential positions, and earnings enjoyed by the dominant group. Conventional schooling systems reproduce these power relations while also serving as a primary gateway to mobility and socioeconomic status in Western societies (Apple, 2013; Bourdieu, 1986).

Indigenous Culture-Based Education

Through the lens of cultural advantage, it is a limited common good that denies itself the full benefits of diverse knowledges. In recognition, advancements in educational research on culture and identity call for culturally resonant pedagogies, challenging educators and policymakers to reexamine the structures, paradigms, and practices of effective education (see Table 1). Earlier research in this area focused primarily on racial and ethnic diversity (e.g., Gay, 2000; Ladson-Billings, 1995), suggesting now well-known though still inconsistently used pedagogies that authentically engage student cultures in learning by:

- acknowledging the legitimacy of different cultural heritages;
- engaging children *through* culture and respecting culture as *content* worthy of learning;
- building meaningful bridges between home and school experiences, between academic abstractions and lived sociocultural realities;
- using a wide variety of instructional strategies to connect with different learning styles;
- teaching students to know and praise their own and others' cultural heritages;
- embedding multicultural information, resources, and materials in all subjects and skills routinely taught in schools.

Reflexive, critical scholarship strengthens these approaches, seeing beyond culturally responsive pedagogy to one that will “perpetuate and foster—to sustain—linguistic, literate, and cultural pluralism as part of the democratic project of schooling” (Paris, 2012, p. 95; see also Ladson-Billings, 2014).

Indigenous scholarship sharpens the focus on social justice and self-determination, arguing that where culture and language have been lost or oppressed through colonizing forces, education, research, and theory must

Table 1
Evolving Approaches and Aims of Culture in Education

Ways in Which Culture Is Integrated in Education	Key Aim
1. Invisible: All education is culture based, typically reflecting an invisible Western cultural norm in the United States	<ul style="list-style-type: none"> • Assimilation, protecting hegemony of Western culture in education
2. Culturally appropriate: Cultural styles, competency, or sensitivity approaches emphasizing respect and tolerance for other cultures and ways of learning (Gutiérrez & Rogoff, 2003)	<ul style="list-style-type: none"> • Teaching tolerance and respect for diversity
3. Culturally relevant/responsive: Pedagogy and curriculum are culturally attuned and responsive to students' diverse cultural communities and experiences (Castagno & Brayboy, 2008; Gay, 2000; Ladson-Billings, 1995)	<ul style="list-style-type: none"> • 2 and • Student engagement and positive identity formation; cultural diversity
4. Culturally sustaining: Pedagogical approaches supporting both traditional and evolving ways of cultural connectedness for youth (Paris, 2012)	<ul style="list-style-type: none"> • 2, 3, and • Sustains linguistic, literate, and cultural pluralism as the democratic project of schooling
5. Culturally sustaining and revitalizing: Revitalizing connections to identity and mother language that have withstood colonization, ethnocide, and linguisticide (McCarty & Lee, 2014)	<ul style="list-style-type: none"> • 2, 3, 4, and • Rebuilds control over language, self-determination
6. Culture-based: Instruction and student learning evolving from the values, norms, knowledge, beliefs, practices, experiences, places, and language of a cultural group, for example, Japanese, Jewish, Jesuit, or Hawaiian (Demmert & Towner, 2003; Kana'iaupuni & Kawai'ae'a, 2008)	<ul style="list-style-type: none"> • 2, 3, 4, 5, and • Transmits and applies cultural ways of being, knowing, and doing within past, present, and future contexts

embrace the purpose of restoring culture and identity to a healthy place (Castagno & Brayboy, 2008; Goodyear-Ka'ōpua, 2013; Meyer, 2008; Reyes, 2013). Thus, critical “culturally sustaining and revitalizing pedagogy,” or CSR (McCarty & Lee, 2014), centers on cultural restoration and self-determination, also spelled out in international conventions such as the U.N. *Declaration on the Rights of Indigenous Peoples*, Article 14 (United Nations, 2009). Fundamentally, a culturally sustaining and revitalizing pedagogy is one that will “serve the needs of Indigenous communities as defined

by those communities” (McCarty & Lee, 2014, p. 103; see also Brayboy, 2005).

The diverse cultural approaches and their primary educational purposes summarized in Table 1 traverse from assimilation as a key purpose (definition No. 1) to sustaining and revitalizing culture (No. 5). Within this research tradition, we continue to focus on culture-based education (No. 6) for a number of reasons. Culture is the subject of a vast body of research (see Eisenhart, 2001; Kroeber & Kluckhohn, 1952). Native Hawaiians, like other Indigenous peoples, have been romanticized and racialized in ways that reflect a bounded sense of culture (Ledward, 2007). In contrast, we draw on Stuart Hall's (1980) notion of articulation, which views cultural identities as constellations of meanings emerging and evolving through specific socio-political histories. As a theoretical lens, this perspective emphasizes *connections* individuals make with other people, ideas, and experiences. It recognizes individuals and groups assume various positionalities within Hawai'i's diverse social milieu while acknowledging deeper implications of colonization and occupation.

Most generally, CBE refers to approaches to teaching and learning evolving from (but not fixed in) the languages, values, norms, knowledges, beliefs, practices, experiences, and places that are foundational to Indigenous or other cultural groups. Fluidity of culture and ideas is central to this definition. As Ladson-Billings (2014) explains, “this notion of pedagogy shifts, changes, adapts, recycles, and recreates instructional spaces to ensure that consistently marginalized students are repositioned into a place of normativity—that is, that they become subjects in the instructional process, not mere objects” (p. 76).

As Indigenous peoples, our approach to CBE recognizes, first, that educational systems are sites for power negotiation and potential liberation not just of individuals but of entire communities and nations, that knowledge tied to cultural heritage and language is essential to identity and self-determination, and that desired educational outcomes are those useful and meaningful to local and Indigenous communities. Second, Indigenous CBE practices education within local cultural contexts and in service to a community based on the specific history, knowledge, and experiences of its people. Third, Indigenous CBE is dynamic by design, ensuring cultural vibrancy (past, present, and future) through the *production, transmission, and application* of cultural knowledge, language, practices, values, and beliefs. Finally, it carries the broader educational imperative of inspiring children on a journey of self-discovery clarifying who they are and how they and their communities can impact the world. This emancipatory purpose shaped our study design and process for identifying student outcomes within the context of Native Hawaiian education, including socioemotional development, sense of belonging in school, cultural affiliation, connection to community, and college aspirations.

Prior Research on CBE and Student Outcomes of Interest

Prior empirical research examining the impact of CBE suggests several findings consistent with a theory of cultural advantage. We expect positive relationships with student socioemotional development and cultural affiliation based on studies showing Indigenous CBE increases individual and collective identity, building students' positive self-concept, resilience, and confidence (Borofsky, 2010; Tibbetts, Kahakalau, & Johnson, 2007). In turn, socioemotional development improves achievement and other key markers of a healthy, well-adjusted life. For example, among Filipino students, learning family genealogy is positively correlated with school performance, and speaking the heritage language negatively associated with substance abuse and depression (Guerrero, Hishinuma, Andrade, Nishimura, & Cunanan, 2006). Phinney and colleagues (Phinney & Chavira, 1992; Phinney, Cantu, & Kurtz, 1997) document well-established positive relationships between higher ethnic identity and self-efficacy and find inverse relationships with loneliness and depression.

Given research evidence that culturally contextualizing education generates robust relationships and support from surrounding communities and families, we expect CBE increases students' sense of belonging at school (Castagno & Brayboy, 2008; Kawakami, 1999; Lee, 2015; Yazzie-Mintz, 2007). Studies reveal the strong pull of shared priorities for language- and culture-rich education in schools serving Indigenous communities, drawing in parents, youth, and community leaders alike (Demmert & Towner, 2003; Luning & Yamauchi, 2010; Wilson & Kamanā, 2006; Yazzie, 1999).

We also expect CBE to strengthen student engagement in learning, including college aspirations. Prior research shows improved student engagement when educators flexibly "create collaborative and culturally diverse learning environments, adapt cultural patterns in classroom verbal interactions, and other cultural dimensions of reciprocal interaction and dialogic instruction" (Abt-Perkins & Rosen, 2000, p. 254). Various case studies find related positive effects, including Indigenous student gains in math, compared to matched control groups (Kisker et al., 2012; Lipka, Sharp, Brenner, Yanez, & Sharp, 2005; Rickard, 2005), improved math test scores with Native Yup'ik approaches (Adams, Adam, & Opbroek, 2005), doubled achievement results among Pacific Islander university students taking upper-level mathematics courses (Furuto, 2014), and superior Native and non-Native Alaskan student learning outcomes in urban and rural schools using culturally responsive curricula (Sternberg, Lipka, Newman, Wildfeuer, & Grigorenko, 2005).

Contextualizing Hawaiian Culture-Based Education

Against this larger theoretical, pedagogical, and empirical scaffolding, our research examines CBE from an Indigenous Hawaiian stance, looking

particularly at Hawaiian CBE (HCBE) approaches. The case of Native Hawaiians and education is a promising example of progress achieved in light of a darker sociohistorical past. As a cultural-linguistic minority group, today's Native Hawaiians share similar experiences with other Indigenous and racialized groups in the United States and beyond. The unique cultural lineage of Native Hawaiians traces back to a thriving, vibrant Polynesian society, which achieved highly sophisticated resource management and knowledge systems to navigate and prosper in the Pacific. Eventually, the islands unified under a single kingdom with international treaties negotiated across the globe.

Western contact brought exposure to new diseases and drastic population decline, reducing the Indigenous society to one-tenth its former size (Nordyke, 1989). Importantly, it also brought codification of the Hawaiian language, followed by literacy rates topping 90% in the Hawaiian population and a flourishing reading, writing, and publishing community (Wilson, 1999). The majority of teachers were Native Hawaiians in Hawai'i's first schools. Under U.S. occupation, the culture and language unique to Hawai'i became highly threatened. Its people suffered in kind, reeling from assaults including the debilitating impact of educational policies prohibiting the use of Hawaiian language in the 1890s, remaining in effect for nearly 100 years. As a vehicle for language decimation and Western acculturation, schools in Hawai'i did not serve well the interests of Native Hawaiian youth and families (Benham & Heck, 1998; Kamehameha Schools, 2005; Thomas, Kana'iaupuni, Freitas, & Balutski, 2012; Wilson & Kamanā, 2006).

Primarily fueled by the concern and passion of community members, culture and language revitalization has been an organic solution to the negative social indices that have since plagued Hawai'i's Indigenous and Pacific Islander children, including poverty, high-risk behaviors, depression, and poor educational outcomes. Within this sociohistorical context, we explore several research questions originating from the conceptual model in Figure 1. Based on our framework of cultural advantage and research from various disciplines, this model posits direct positive effects of CBE on children's socioemotional development and both direct and indirect effects on other educational outcomes such as student engagement. Recognizing that the strength of CBE is when it reflects local Indigenous communities and knowledge, the model specifies five general components of Indigenous CBE—language, family and community, content, context, and assessment—originally developed as part of a larger project with William Demmert, Nāmaka Rawlins, and colleagues (see Demmert, 2011; Kana'iaupuni & Kawai'ae'a, 2008). These five dimensions are described in Table 2, serving as a guide for the development of our study of Hawaiian culture-based education.

The Hawaiian Cultural Influences in Education (HCIE) project is a community participatory study undertaken in partnership with the Kamehameha

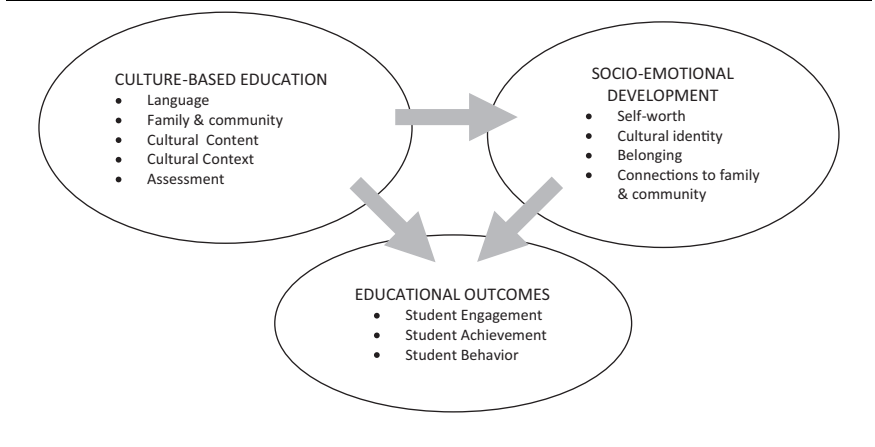


Figure 1. Conceptual model of culture-based education and relationship to student outcomes.

Table 2
Five Dimensions of Culture-Based Education

Language	Recognizing and using the Native or heritage language
Family and community	Actively involving family and community in the development of curricula, everyday learning, and leadership
Content	Making learning meaningful and relevant through culturally embedded content and assessment
Context	Structuring school, classroom, and other learning interactions in culturally meaningful ways
Assessment and accountability	Gathering data and assessing students using various methods to ensure learning and application in culturally purposeful ways

Source. Adapted from Kana'iaupuni and Kawai'ae'a (2008, p. 75).

Schools, the Hawaii State Department of Education (DOE), and an alliance of Hawaiian-focused public charter schools, Nā Lei Na'auao. These three partners oversee a cross-section of schools serving Native Hawaiian and other learners: private schools, conventional public and charter schools, and Hawaiian-focused public charter schools, respectively. Rather than implementing a single CBE curriculum or program, the goal of the study is to explore the relationships, as shown in Figure 1, among learners' socio-emotional and educational outcomes and the various levels of CBE to which they are exposed at school, holding other factors constant. Although the data

do not permit us to test all facets of the conceptual model, the study has produced several briefs, technical papers, and two published articles that portend important research and policy implications for education in service to cultural-linguistic minority communities.

In this article, the analysis explores questions regarding everyday CBE use in Indigenous and other school settings in Hawai'i that may influence selected socioemotional outcomes theorized to contribute to educational outcomes:

Research Question 1: Based on their self-reports, to what extent do teachers use Hawaiian CBE in their daily practice across a range of public and private school settings?

Research Question 2: How does their use of CBE influence students' college aspirations, sense of belonging in school, self-efficacy, cultural affiliation, and connection to community?

Research Question 3: What empirical evidence exists about the relationship between CBE and positive outcomes for Indigenous and other students in school settings?

Methods and Data

The state of Hawai'i consists of a single school district serving 285 public schools—including 32 charter schools—situated in 15 high school complexes throughout the state, serving over 180,000 students annually. The public charter school movement launched a diverse set of 17 Hawaiian-focused schools since 2000, whose missions and objectives are uniquely oriented in Hawaiian culture and knowledge. An additional 125 independent ("private") schools serve nearly 40,000 more learners in the state (see Table 3). The research team invited 81 middle and high schools to participate in the study of self-reported use of CBE approaches in fall 2005, including all Hawaiian-focused public charter schools. The remainder was invited based on two criteria: (a) geographic proximity to the Hawaiian-focused schools and (b) the percentage of Native Hawaiian students enrolled. Specifically, schools with differing levels of Native Hawaiian enrollment—namely, lower than 25%, 25% to 50%, and 50% or higher—in the same communities as Hawaiian-focused schools served as comparison schools. This sampling method, which resulted in a 77% participation rate (62 of 81 schools), was critical to ensure variability in school types, compositions, and approaches in communities throughout the state.

The schools reflect a range of geographic and cultural diversity. In the decade since recruitment, little change has occurred in the disparities between Native Hawaiian students and others (Kamehameha Schools, 2005, 2014). Classifying them according to governance types and level of Hawaiian cultural influence resulted in six combination types: (a)

Table 3
Participating Schools by Type and Island Location

Governance structure	School Types	Islands
Department of Education (DOE)	<ul style="list-style-type: none"> • Conventional public schools • Hawaiian-immersion public schools: deliver instruction in Hawaiian language 	Hawai'i, Maui, Moloka'i, O'ahu, Kaua'i
Public charter schools	<ul style="list-style-type: none"> • Western-focused charter schools • Hawaiian-focused charter schools: Hawaiian culture-based with English as dominant mode of instruction • Hawaiian-medium charter schools: Hawaiian language is medium of instruction and operations 	Hawai'i, Maui, Moloka'i, O'ahu, Kaua'i
Private schools	Hawaiian-focused private schools: Hawaiian culture-based with English as dominant mode of instruction	Hawai'i, Maui, O'ahu

conventional (Western-focused) public schools, (b) Hawaiian-immersion public schools, (c) Western-focused public charter schools, (d) Hawaiian-focused public charter schools, (e) Hawaiian-medium public charter schools, and (f) Hawaiian-focused private schools (see Table 3).

Instruments

A Hawaiian Indigenous Education (teaching) Rubric (HIER) was developed to articulate the five general components of CBE in Native Hawaiian contexts. (A copy of the full rubric; details of its construction, testing, and validation; and its correlation to effective teaching standards established by the Center for Research on Diversity, Education and Excellence [CREDE, see Doherty & Hilberg, 2007], are fully presented in Kana'iaupuni & Kawai'ae'a, 2008.) The five-page rubric lists critical indicators for each of the five components and specific descriptions (e.g., "I create opportunities for intergenerational learning, where students learn from each other, from teachers, and from *kūpuna*," elders) along a continuum of achievement levels: none, emerging, developing, and enacting.

Collaboratively developed with Hawaiian education scholars and practitioners, the rubric is intended as a framework for defining, describing, and measuring the best practices associated with Hawaiian CBE. Accordingly, the questionnaires for teachers and administrators, which are based on the rubric, measure implementation of best culture-based practices in classrooms and schools, respectively (e.g., almost daily, weekly, monthly, once

or twice a semester/year). All teachers in the sampled schools were invited to participate (Grades 7– 10) and received hard copy and digital questionnaires, resulting in a 40% (600 of 1,500) response rate.

Subsequently, a collaborative, multidisciplinary team of some 25 researchers—including education practitioners and researchers, psychometricians, demographers, sociologists, linguists, counselors, and anthropologists—supported the design of self-administered questionnaires for students and parents. The student questionnaire contains psychometrically validated outcomes, including Hawaiian cultural affinity (using a Hawai'i-focused scale adapted from the Multigroup Ethnic Identity Measure-Revised; Phinney & Chavira, 1992), self-efficacy, student connections to school and community, and college aspiration. These underlying constructs are hypothesized to be important socioemotional outcomes and also indirect correlates of academic achievement such as higher test scores, high school graduation, and college completion (Demmert, 2011; Takayama & Ledward, 2009). All 8,000 students of the 600 teachers were invited to participate in the survey, and 32% (approximately 2,600) consented and completed the questionnaires.

Although the scope of the study is unprecedented in the Hawaiian education community, it has limitations. The sample design in which Hawaiian-focused schools were selected and surrounding public and charter schools invited helped control for community-specific characteristics but precludes generalizations to the entire state of Hawai'i. Further, researchers attempted to collect completed questionnaires from at least half of all eligible teachers in a participating school, achieving the goal in 35% (22 schools), and less than 20% of eligible teachers returned completed questionnaires in 21% of participating schools (13 schools). While reliant on teacher self-reports, questionnaire items were randomized to reduce response bias, and we expect responses to correlate reasonably with behavior (Koziol & Burns, 1986). Finally, evidence suggests Hawaiian teachers are overrepresented in the study; 24% in our sample of public schools self-report as Hawaiian/part-Hawaiian, compared to roughly 10% teachers reporting their primary race as Hawaiian in the 2006 Superintendent's Report. This possible overrepresentation of Hawaiian teachers may reduce the generalizability of our findings to other schools in the state but should not bias the effects on student outcomes.

Analyses

All questionnaire data were entered by two researchers independently to reduce data entry errors. CBE items were standardized to a 6-point scale and categorized by participating school types.

The level of CBE use among teachers is operationalized by creating comparable measures of its five continua on the reported *frequency of use*

of a CBE practice measured by a normalized weighted sum. The higher the value, the greater the frequency of CBE use in teaching practices. A similar method provides a benchmark indicator measuring effective teaching based on CREDE standards.

Descriptive analyses provide context about teachers' reported CBE use. Additional cross-tabulations examine Native Hawaiian student outcomes by school type and high-/low-intensity CBE use. Because each student had multiple teachers in the data set, descriptive analyses select for the teacher reporting the highest CBE use.

To better assess correlations between CBE use and the selected student outcomes in light of other potential explanatory factors, logistic regression analyses include all 1,988 students matched to their teachers, parents, and schools, yielding 10,791 unique student-teacher dyads. Two indicators assess CBE use: one at the classroom and another at the school level. Classroom-level CBE is operationalized as a teacher's summed score of all five CBE domains, and school-level CBE represents the percentage of teachers in the school who exhibit high intensity in four of five CBE domains. Two interaction terms assess effects of classroom-level CBE on the unique experiences of male and low socioeconomic status (SES) students, owing to persistently poor performance of males and low SES students in Hawai'i, especially among Native Hawaiians (Stender, 2010).

The analyses examine several student outcomes, including college aspirations, sense of belonging to school (students express trust people in school, feel teachers care about them, and view people at school as family), and socioemotional development (self-efficacy, cultural affiliation, and connection to community), controlling for other factors such as student gender, grade, and ethnicity; parental educational attainment and income; teacher gender and experience; and school type, language, and ethnic and SES composition. These exploratory analyses support the hypothesized relationships specified by the conceptual model and establish a foundation for continued qualitative and quantitative investigation and longitudinal study in the future.

Findings

Teacher Use of CBE

The first set of analyses examines the frequency of CBE approaches (Table 4). In each setting, participating teachers employ culture-based teaching practices, as evident in the responses across school types for the five continua. Overall, teachers in public charter schools report the greatest use of both CBE approaches and CREDE standards relative to the DOE and private schools.

Schools were disaggregated based on statistically significant differences among charter school types (Hawaiian-focused, Western-focused, and

Table 4
Frequency of Teacher Culture-Based Education (CBE) Use by Disaggregated School Type

CBE Continuum	Department of Education Schools		Public Charter Schools			
	Conventional	Hawaiian Immersion	Western-Focused	Hawaiian-Focused	Hawaiian-Medium	Private
Content (<i>n</i> = 597)	33.1	42.2	33.3	42.4	46.0	34.5
Context (<i>n</i> = 596)	58.2	75.5	55.4	74.0	79.8	63.8
Assessment (<i>n</i> = 592)	68.7	81.0	77.0	77.9	85.2	72.6
Family and community (<i>n</i> = 598)	57.0	68.8	57.2	71.2	84.1	56.4
Language (<i>n</i> = 598)	31.3	85.4	28.7	66.7	89.4	49.8
Center for Research on Diversity, Education and Excellence (CREDE; <i>n</i> = 593)	70.2	78.5	68.9	78.2	84.3	67.5

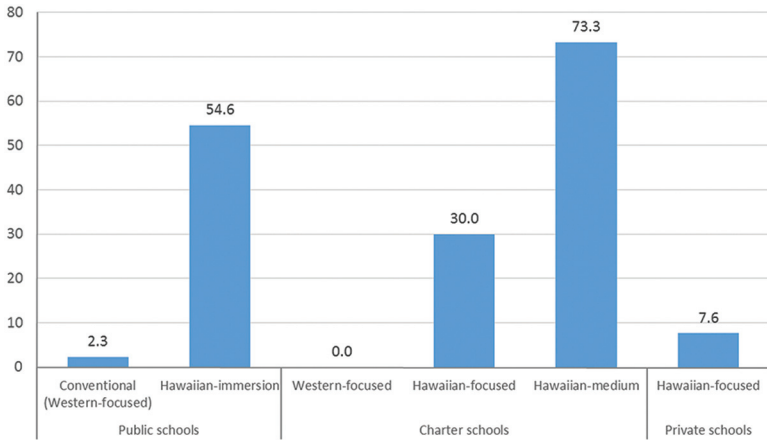


Figure 2. Concentration of high-intensity culture-based education teachers by disaggregated school types.

Hawaiian-medium) and Hawaiian-immersion programs in DOE schools. All school types use some CBE practices, with the highest use (not surprisingly) of CBE and CREDE standards found in Hawaiian-immersion public schools and Hawaiian-medium and Hawaiian-focused public charter schools, compared to other settings. Cultural content, for example, ranges from 45.2 to 46.0 in these three settings, versus 33.2 in DOE and private schools. Overall, environments supporting the highest frequencies of CBE are Hawaiian-medium public charter schools, with average teacher use in the 80th percentile for four of five continua. Hawaiian-immersion public schools and Hawaiian-focused charters followed closely with values hovering in the 70th percentile for most continua.

Regarding intensity of CBE, we find that half the respondents (53%) are low-intensity CBE users (in the lower three quartiles of each continua), a third (33%) are moderate users (in the upper quartile of one to three continua), and roughly 14% report high-intensity CBE use (in the upper quartile of four of five continua). Figure 2 presents the distribution across six school types, ranging from none to 73.3% of teachers. Although not shown due to space constraints, both Native Hawaiian and non-Hawaiian teachers report high-intensity CBE use in nearly all school types and most frequently in Hawaiian culture and language schools. These results affirm that culture-rich school environments and leadership can support educators to use CBE approaches with their students.

Teacher survey results reveal three main findings. First, CBE is being implemented in diverse classrooms across the state. Hawaiian culture- and language-

based schools are setting the pace in delivering CBE; however, frequent and high-intensity examples of CBE also exist in more mainstream settings. Second, CBE use is not exclusive to a single ethnic group. Teachers of diverse ethnic backgrounds recognize the advantages of CBE, and certain school settings (e.g., Hawaiian-focused, Hawaiian-immersion, and Hawaiian-medium schools) are conducive to higher frequency and intensity of CBE practice. Third, across all school types, including culturally grounded schools, teachers report regularly using approaches considered best practice in teaching and learning—for example, integrating family, community members, and elders into the learning experience or assessing students' knowledge and skills in culturally meaningful ways, such as *hō'ike* (performances), to demonstrate what they have learned in groups or individually. In contrast to the view that CBE conflicts with effective teaching practices, these data suggest a “double win” for children in Indigenous CBE environments. Teachers use CBE in conjunction with best practice principles of effective teaching, such as contextualization and joint productive activity (see Kana'iaupuni & Ledward, 2013).

CBE Influences on Student Outcomes

The next set of descriptive results begins to address empirical evidence of CBE's influences on students in school settings. Figures 3 through 5 present findings for Native Hawaiian students, who are of particular interest in this study as Indigenous learners.

Overall, the data suggest positive relationships between CBE approaches and key student outcomes. Having a high-intensity CBE teacher is strongly related to Native Hawaiian students belonging at school and application of cultural skills outside of school (see Figure 3). In this bivariate analysis, students with high-intensity CBE teachers also were significantly more likely to expect to graduate college.

Figure 4 charts student cultural affiliation using a 10-item scale (reliability, $\alpha = .92$) grouped into two subfactors. It shows a positive association between Indigenous students' cultural affiliation and having one or more high-intensity CBE teachers ($p < .001$). Students of high-intensity CBE teachers also have markedly greater knowledge of their culture, commitment to cultural values, and comfort with their heritage language. In these descriptive analyses, differences were insignificant for self-esteem/self-efficacy.

High-intensity CBE also appears to accompany deeper community connections for students. Over half of students with high-intensity CBE teachers engaged repeatedly in social or political causes of particular concern to the Native Hawaiian community, as illustrated in Figure 5. For example, on multiple occasions, one-third of students had attended community or school meetings, and three-quarters had acted to protect the environment in their communities. In addition to the tabled results, students of high-intensity CBE teachers also report greater engagement with local issues such as

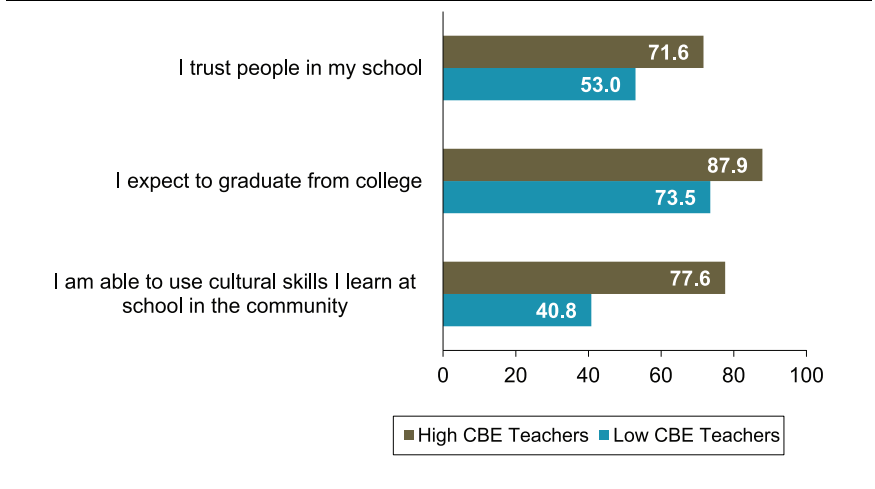


Figure 3. Belonging, aspirations, and relevancy of skills among Native Hawaiian students by intensity of culture-based education use.

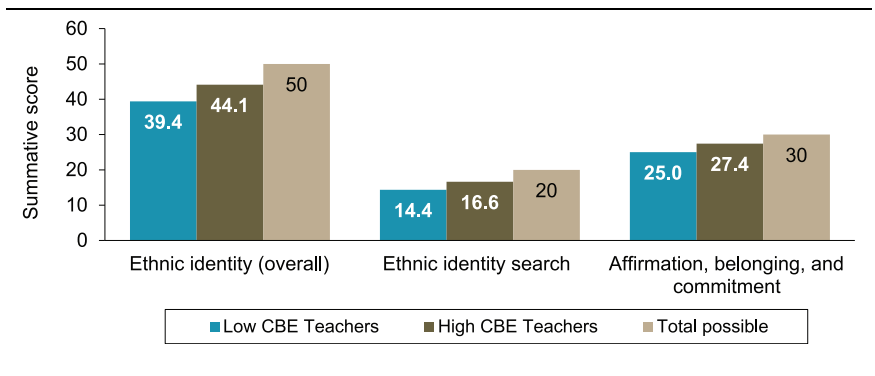


Figure 4. Cultural affiliation among Native Hawaiian students by intensity of culture-based education use.

land development, Hawaiian language revitalization, and Native rights. Together, these differences indicate a consistent positive relationship between CBE and students’ contributions to their communities.

The final set of analyses examines multivariate relationships between student outcomes and their relationships to teacher CBE use, controlling for student sociodemographic and teacher characteristics, family SES, and school-level governance, ethnic composition, and SES composition. The

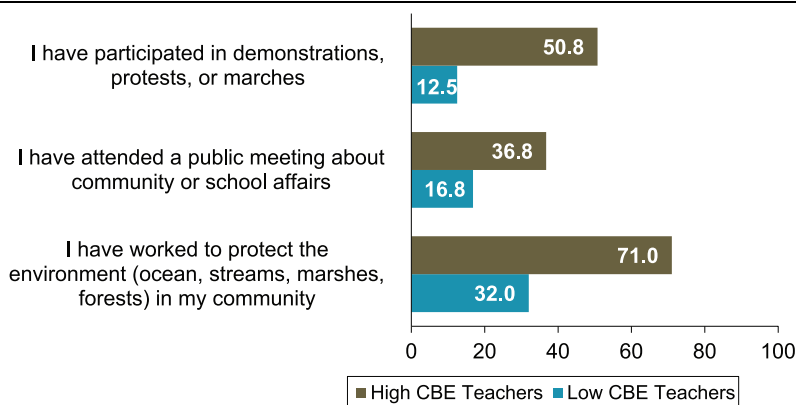


Figure 5. Native Hawaiian students' community action or service (>1 occasion) by intensity of culture-based education use.

five outcomes in Table 5 include college aspirations, sense of belonging, and socioemotional development in self-efficacy, cultural affiliation, and connection to community. Given the diverse settings in which these students and teachers interact, the analyses also examine differences in schoolwide CBE and language environment to account for factors beyond the teacher relationship.

Multiple imputations of missing values were conducted using an expectation-maximization algorithm (Allison, 2000). No item included in the models had more than 10% of respondents with missing data, and an analysis of the missing data revealed no systematic pattern to the missingness. The Stata mi command was used to generate 10 data sets with imputed values that were then used in the logistic regression models reported in Table 5. Each model was assessed for possible influential cases, shifts in standard errors, and multicollinearity

Results show Native Hawaiian students have 35% lower odds of high college aspirations compared to their peers in these models, which mirrors their lower college attendance and completion rates (Kamehameha Schools, 2005, 2014). However, high teacher CBE is positively correlated with significantly higher college aspirations (20 percentage points) among male students. Similarly, odds for self-efficacy are lower among Hawaiian students (25%) but simultaneously associated with an 11-fold increase in schools with high CBE use. Relative to other students and despite lower self-efficacy, Native Hawaiian students report higher cultural affiliation (370%) and greater connection to community (315%), net of other controls, providing insights into the very building blocks of cultural advantage.

Table 5
Multivariate Models of the Relationship Between Key Variables of Interest and Student Outcomes

Key Variables	Student Outcomes															
	College Aspirations			Sense of Belonging			Self-Efficacy			Cultural Affiliation			Connection to Community			
	Odds Ratio	SE	Pr > t	Odds Ratio	SE	Pr > t	Odds Ratio	SE	Pr > t	Odds Ratio	SE	Pr > t	Odds Ratio	SE	Pr > t	
Student level																
Hawaiian ethnicity	0.645	0.051	<0.001	1.145	0.103	0.133	0.750	0.065	0.001	3.705	0.658	<0.001	3.154	0.361	<0.001	
Classroom level																
High CBE use by teacher	0.923	0.064	0.251	0.961	0.065	0.559	1.038	0.074	0.603	1.132	0.083	0.091	1.164	0.083	0.034	
High CBE use × low SES	0.930	0.120	0.571	1.363	0.188	0.025	1.151	0.179	0.366	1.005	0.160	0.975	1.195	0.175	0.224	
High CBE use × male student	1.195	0.104	0.040	1.120	0.099	0.199	1.051	0.098	0.593	1.048	0.100	0.621	0.938	0.089	0.500	
School level																
High levels of school CBE	1.355	0.618	0.505	6.201	2.898	0.000	11.427	5.593	<0.001	4.395	2.252	0.004	1.181	0.571	0.731	
Hawaiian-language school	1.376	0.425	0.302	1.187	0.377	0.590	0.560	0.184	0.077	0.9343	0.318	0.842	0.620	0.205	0.149	

Note. CBE = culture-based education; SES = socioeconomic status.

Bold text denotes cells in which odds ratios are statistically significant (p < .05).

Students in high-CBE classrooms show a 16% increase in connections to community. High CBE classrooms are particularly correlated to heightened sense of belonging (odds ratio = 6.201), and low SES students are 36% more likely than their lower income peers to have a high sense of belonging in such environments.

In high-CBE school environments, positive results emerge, affirming the importance of cultural advantage. Sense of belonging odds increase more than six-fold, self-efficacy odds jump more than 11 times higher, and cultural affiliation more than quadruples in high-CBE schools. While we found no effect of Hawaiian-language environments, these results suggest that student well-being may well hinge on rich schoolwide cultural learning environments, even in schools where Hawaiian language is used for instruction. These findings have practical implications for the strategies adopted by Hawaiian-focused, Hawaiian-immersion, and Hawaiian-medium schools as well as the outcomes they seek to achieve, especially with respect to socio-emotional wellbeing.

Concluding Thoughts: Advancing Self-Determination Through Self-Empowered Learning

A Native Hawaiian proverb, *mohala i ka wai ka maka o ka pua*, describes how a flower blossoms where growing conditions are favorable (Puku'i, 1983). It is a metaphor for a child's growth, for a young learner also will blossom where learning conditions are optimal. As educators situated within an intensifying movement toward Indigenous culture-based education in Hawai'i, our work owes much to the research of Demmert (2011) and countless others who have devoted lifetimes to reimagining educational systems where all children blossom. Like life-giving elements of rain, soil, and sunlight, next-century educators can create more just and equitable learning environments built on cultural assets to foster improved outcomes for Indigenous learners and communities.

This research is a call to action to transform educational systems as sites for power negotiation and liberation of individuals, communities, and nations. It is a call to recognize the gift of knowledge tied to cultural tradition and language with accountability to student outcomes that are useful and meaningful to local and Indigenous communities. As with this Centennial Issue, our study marks but one milestone in a journey that many others will continue to build and refine.

Adopting the theoretical lens of cultural advantage raises critical questions about who benefits from particular pedagogical approaches. For instance, how do students, Indigenous or otherwise, experience "culturally appropriate" school events? What reflections emerge as a result of their participation? How might these experiences reinforce or challenge students' belonging, self-efficacy, and community connections? These questions can

position students with greater power and agency in relation to the context and purpose of their learning. When taught to examine daily life events consciously and critically, drawing from the cultural values and experiences of their communities, students are empowered to self-determine their participation and utilization of events/tools, even those originally conceived to mask inequity.

To illustrate, we highlight student reflections from a Hawaiian-focused public charter school in this study that engages students as critical thinkers and change agents, rigorously examining concepts and historic events such as U.S. occupation, genetic modification, and the protection of sacred sites using a rigorous Hawaiian values-based framework for leadership (Goodyear-Ka'ōpua, 2013). Students from this school voice the kinds of impacts described in our study. They reveal considerable insight and self-empowerment gained through this culturally and politically rich educational curriculum. One student reflected, “[We were] taught to recognize when a wrong is committed and [to] also [do] all in our power to remedy that,” through valuable experiences at the State Capitol regarding contemporary Indigenous issues (Goodyear-Ka'ōpua, Kauai, Maioho, & Winchester, 2008, p. 184). Another offered that the experience taught students “to be open about our opinions when it comes to political issues. We are not only learning about Math and English, we are now learning about what happens in the real world and what will affect our lives in the future” (Goodyear-Ka'ōpua et al., 2008, pp. 184–185). Another student wisely reasoned, “[I]f in schools the teachers do not . . . discuss politics and recent issues, all they're doing is graduating ignorant fools . . . Make sure the youth [are] not ignorant to the world around them” (Goodyear-Ka'ōpua et al., 2008, pp. 184–185).

In another illustrative example, Kaomea (2011) uses cultural advantage to reshape conventional math pedagogy, which teaches children from historically marginalized communities that mathematics as a school subject is divorced from their personal and cultural experiences. Consequently, she argues, students often perform poorly and end up internalizing negative self-perceptions about their knowledge and ability in math. Alternatively, a powerful, affirming approach engages Native Hawaiian students in exploring the rich mathematical achievements of their ancestors and in applying their knowledge to actual challenges, such as conducting calculations and decision making necessary to feed entire communities from the land or voyage across the vast Pacific Ocean guided by star-compass technology. She encourages students to apply their learning to solve future problems using perspectives and philosophies of various intellectual and cultural traditions, including Western; for instance, planning for real-world challenges like planting and harvesting under imminent conditions of climate change and rising sea levels.

These qualitative examples offer a deeper glimpse into results captured by the present study. The first of its kind and scope, the study produced

a great deal of rich and meaningful data about CBE approaches presented here in highly summarized form. The development and application of the HIER rubric continue our journey in understanding CBE across geographic, institutional, and ethnic differences. As an Indigenous community participatory research project, the study offers a model for involving diverse stakeholders in educational research to develop robust tools, methods, and questions that have community-wide utility. Looking ahead, we imagine this community-engaged approach to be the new norm for generating and sharing knowledge in both Indigenous and non-Indigenous research.

Our findings contribute to the work of many educators and researchers across the globe that demonstrate what is possible when communities are able to guide the education of their children, unleashing greater relevance and meaning in both outcome and substance. Although limited by cross-sectional data, the findings tell a compelling story for youth. They suggest positive relationships capable of igniting powerful learning for students and communities, heightening students' socioemotional development, self-efficacy, and community engagement. Significantly, positive correlations emerge for low-SES and male students who experience high CBE use, suggesting potentially important implications for youth who face some of the greatest struggles in modern educational systems. Most importantly, high schoolwide CBE environments are correlated with improved outcomes critical to student well-being, supplementing the links between teachers' CBE use and students' self-efficacy and trusting connections to school. These connections are especially valuable in Indigenous contexts where families often experience multiple generations of marginalization within public schools.

Overall, our analyses provide a strong case that CBE is well suited for further development and implementation, based on its efficacy for children, alignment with other research-based best practices, and appeal among a growing number of teachers pursuing greater relevance for learners. While longer-term outcomes, such as college persistence, would benefit from longitudinal data and further study, the findings have broader policy and program implications for national efforts that often fail to recognize the importance of language and culture for Indigenous and other minoritized children and families. The consequences of this failure are replete in the well-worn trail of low achievement, low socioeconomic status, and poor health of this nation's Indigenous and minoritized populations.

Countering these challenges, we join the many voices calling for a shift in Indigenous education and research not to focus on the devastating after-effects of colonization but to recognize and value the strengths and resilience of Indigenous communities. Embracing the emancipatory potential of culture-based education is a "win" for everyone in our increasingly plurilingual, pluricultural society, who will benefit from the assets found in Indigenous knowledge, values, and stories as models of vitality and empowerment through which we can all progress.

Note

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References

- Abt-Perkins, D., & Rosen, L. (2000). Preparing English teachers to teach diverse student populations: Beliefs, challenges, proposals for change. *English Education, 32*(4), 251–266.
- Adams, B., Adam, S., & Opbroek, M. (2005). Reversing the academic trend for rural students: The case of Michell Opbroek. *Journal of American Education, 44*(3), 55–79.
- Allison, P. (2000). Multiple imputation for missing data: A cautionary tale. *Sociological Methods and Research, 28*, 301–309.
- Apple, M. (2013). *Can education change society?* New York, NY: Routledge.
- Benham, M. K., & Heck, R. H. (1998). *Culture and educational policy in Hawai'i: The silencing of Native voices*. Mahwah, NJ: Lawrence Erlbaum.
- Borofsky, A. R. H. (2010). Measuring Native Hawaiian leadership among graduates of Native Hawaiian charter schools. *Hūlili: Multidisciplinary Research on Hawaiian Well-Being, 6*(1), 169–185.
- Bourdieu, P. (1986). The forms of capital. In J. Richardson (Ed.), *Handbook of theory and research for the sociology of education*. New York, NY: Greenwood.
- Brayboy, B. (2005). Toward a tribal critical race theory in education. *Urban Review, 37*(5), 425–446.
- Bullivant, B. (1981). *The pluralist dilemma in education*. Sydney: Allen and Unwin.
- Castagno, A. E., & Brayboy, B. M. J. (2008). Culturally responsive schooling for Indigenous youth: A review of the literature. *Review of Educational Research, 78*(4), 941–993.
- Demmert, W. G. (2011). What is culture-based education? Understanding pedagogy and curriculum. In J. Reyhner, W. S. Gilbert, & L. Lockard (Eds.), *Honoring our heritage: Culturally appropriate approaches for teaching Indigenous students* (pp. 1–10). Flagstaff, AZ: Northern Arizona University.
- Demmert, W. G., Jr., & Towner, J. C. (2003). *A review of the research literature on the influences of culturally based education on the academic performance of Native American students*. Portland, OR: Northwest Regional Education Laboratory.
- Doherty, R., & Hilberg, R. (2007). Standards for effective pedagogy, classroom organization, English proficiency, and student achievement. *Journal of Educational Research, 101*(1), 24–35.
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405–432.
- Eisenhart, M. (2001). Changing conceptions of culture and ethnographic methodology: Recent thematic shifts and their implications for research on teaching. In V. Richardson (Ed.), *Handbook of research on teaching* (4th ed., pp. 209–225). Washington, DC: American Educational Research Association.
- Furuto, L. (2014). Pacific ethnomathematics: Pedagogy and practices in mathematics education. *Teaching Mathematics and Its Applications, 33*(2), 110–121.

- Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice*. New York, NY: Teachers College Press.
- Giroux, H. A. (2011). *On critical pedagogy*. New York, NY: Continuum.
- Glazer, N. (1997). *We are all multiculturalists now*. Cambridge, MA and London: Harvard University Press.
- González, N., Moll, L., & Amanti, C. (Eds.). (2005). *Funds of knowledge: Theorizing practices in households, communities and classrooms*. Mahwah, NJ: Lawrence Erlbaum.
- Goodyear-Ka'ōpua, N. (2013). *The seeds we planted: Portraits of a Native Hawaiian charter school*. Minneapolis, MN: University of Minnesota Press.
- Goodyear-Ka'ōpua, N., Kauai, W., Maioho, K., & Winchester, 'I. (2008). Teaching amid U.S. occupation: Sovereignty, survival, and social studies in a Native Hawaiian charter school. *Hūlili: Multidisciplinary Research on Hawaiian Well-Being*, 5(1), 155–192.
- Gorski, P., & Swalwell, K. (2015). Equity literacy for all. *Educational Leadership*, 72(6), 34–41.
- Grande, S. (2008). Red pedagogy: The un-methodology. In N. K. Denzin, Y. S. Lincoln, & L. T. Smith (Eds.), *Handbook of critical and Indigenous methodologies* (pp. 233–254). Los Angeles, CA: SAGE.
- Guerrero, A., Hishinuma, E., Andrade, N., Nishimura, S., & Cunanan, V. (2006). Correlations among socioeconomic and family factors and academic, behavioral, and emotional difficulties in Filipino adolescents in Hawai'i. *International Journal of Social Psychiatry*, 52(4), 343–359.
- Gutiérrez, K. D., & Rogoff, B. (2003). Cultural ways of learning: Individual traits or repertoires of practice. *Educational Researcher*, 32(5), 19–25.
- Hall, S. (1980). Race, articulation, and societies structured in dominance. In UNESCO (Ed.), *Sociological theories: Race and colonialism* (pp. 305–345). Paris: UNESCO and Bernan Associates.
- International Labour Organization. (1989). *Convention 169-Indigenous and Tribal Peoples Convention (No. 169)*. Retrieved from http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C169
- Kamehameha Schools. (2005). *Ka buaka'i: 2005 Native Hawaiian educational assessment*. Honolulu, HI: Kamehameha Publishing.
- Kamehameha Schools. (2014). *Ka buaka'i: 2014 Native Hawaiian educational assessment*. Honolulu, HI: Kamehameha Publishing.
- Kana'iaupuni, S. (2004). Ka'akalai ku kanaka: A call for strengths-based approaches from a Native Hawaiian perspective. *Educational Researcher*, 33(9), 26–32.
- Kana'iaupuni, S., & Kawai'ae'a, K. (2008). E lauhoe mai nā wa'a: Toward a Hawaiian indigenous education teaching framework. *Hūlili: Multidisciplinary Research on Hawaiian Well-Being*, 5(1), 67–90.
- Kana'iaupuni, S., & Ledward, B. (2013). Ho'opilina: The call for cultural relevance in education. *Hūlili: Multidisciplinary Research on Hawaiian Well-Being*, 9(1), 153–204.
- Kaomea, J. (2003). Reading erasures and making the familiar strange: Defamiliarizing methods for research in formerly colonized and historically oppressed communities. *Educational Researcher*, 32(2), 14–25.
- Kaomea, J. (2011). Hawaiian math for a sustainable future: Envisioning a conceptual framework for rigorous and culturally relevant 21st century elementary mathematics education. *Hūlili: Multidisciplinary Research on Hawaiian Well-Being*, 7(1), 289–306.
- Kawakami, A. J. (1999). Sense of place, community, and identity. *Education and Urban Society*, 32(1), 18–39.

Indigenous Culture-Based Education and Student Outcomes

- King, J. (2015, April). *Morally engaged research/ers dismantling epistemological nihilism in the age of impunity*. AERA Presidential Address, Annual Meeting of the American Educational Research Association, Chicago, IL.
- Kisker, E., Lipka, J., Adams, B., Rickard, A., Andrew-Ihrke, D., Yanez, E., & Millard, A. (2012). The potential of a culturally based supplemental mathematics curriculum to improve the mathematics performance of Alaska Native and other students. *Journal for Research in Mathematics Education*, 43(1), 75–113.
- Kozioł, S. M., Jr., & Burns, P. (1986). Teachers' accuracy in self-reporting about instructional practices using a focused self-report inventory. *Journal of Educational Research*, 79(4), 205–209.
- Kroeber, A. L., & Kluckhohn, C. (1952). Culture: A critical review of concepts and definitions. *Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University*, 47(1).
- Kymlicka, W. (1989). *Liberalism, community, and culture*. Oxford, UK: Oxford University Press.
- Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, 32(3), 465–491.
- Ladson-Billings, G. (2014). Culturally relevant pedagogy 2.0: A.k.a. the remix. *Harvard Educational Review*, 84(1), 74–84.
- Ledward, B. (2007). On being Hawaiian enough: Contesting American racialization with Native hybridity. *Hūlili: Multidisciplinary Research on Hawaiian Well-Being*, 4(1), 107–143.
- Lee, T. S. (2015). The significance of self-determination in socially, culturally, and linguistically responsive (SCLR) education in Indigenous contexts. *Journal of American Indian Education*, 51(1), 10–32.
- Lipka, J. (2002). *School for self-determination: Research on the effects of including Native language and culture in the schools*. Washington, DC: Office of Educational Research and Improvement.
- Lipka, J., Sharp, N., Brenner, B., Yanez, E., & Sharp, F. (2005). The relevance of culturally based curriculum and instruction: The case of Nancy Sharp. *Journal of American Indian Education*, 44(3), 31–54.
- Lomawaima, K.T., & McCarty, T. L. (2006). *“To remain an Indian”: Lessons in democracy from a century of Native American education*. New York, NY: Teachers College Press.
- Luning, R. J. I., & Yamauchi, L. A. (2010). The Influences of Indigenous heritage language education on students and families in a Hawaiian language immersion program. *Heritage Language Journal*, 7(2), 45–74.
- May, S. (2014). Justifying educational language rights. *Review of Research in Education*, 28(215), 215–241.
- McCarty, T., & Lee, T. (2014). Critical culturally sustaining/revitalizing pedagogy and Indigenous education sovereignty. *Harvard Educational Review*, 84(1), 101–124.
- Meyer, M. (2008). Indigenous and authentic; Hawaiian epistemology and the triangulation of meaning. In N. Denzin, Y. Lincoln, & L. Smith (Eds.), *Handbook of critical and Indigenous methodologies* (pp. 217–232). Los Angeles, CA: SAGE.
- Nordyke, E. (1989). *The peopling of Hawaii*. Honolulu, HI: University of Hawaii Press.
- Nussbaum, M. (1997). *Cultivating humanity: A classical defense of reform in liberal education*. Cambridge, MA: Harvard University Press.
- Ogbu, J. (1982). Cultural discontinuities and schooling. *Anthropology and Education Quarterly*, 13, 290–307.

- Paris, D. (2012). Culturally sustaining pedagogy: A needed change in stance, terminology, and practice. *Educational Researcher*, 41(3), 93–97.
- Phinney, J., Cantu, C., & Kurtz, D. (1997). Ethnic and American identity as predictors of self-esteem among African American, Latino, and White adolescents. *Journal of Youth and Adolescence*, 26, 165–185.
- Phinney, J. S., & Chavira, V. (1992). Ethnic identity and self-esteem: An exploratory longitudinal study. *Journal of Adolescence*, 15, 271–281.
- Puku'i, M. K. (1983). *‘Ōlelo No‘eau: Hawaiian proverbs and poetical sayings*. Honolulu, HI: Bishop Museum Press.
- Reyes, N. A. S. (2013). 'Ike Ku'oko'a: Indigenous critical pedagogy and the connections between education and sovereignty for ka Lāhui Hawai'i. *Hūlili: Multidisciplinary Research on Hawaiian Well-Being*, 9(1), 205–227.
- Rickard, A. (2005). Constant perimeter, varying area: A case study of teaching and learning mathematics to design a fish rack. *Journal of American Indian Education*, 44(3), 80–100.
- Silva, N. K. (2004). *Aloha betrayed: Native Hawaiian resistance to American colonialism*. Durham, NC: Duke University Press.
- Skutnabb-Kangas, T., & Dunbar, R. (2010). Indigenous children's education as linguistic genocide and a crime against humanity? A global view. *Gāldu Čála—Journal of Indigenous Peoples Rights*, 1.
- Sleeter, C. E. (2012). Confronting the marginalization of culturally responsive pedagogy. *Urban Education*, 47(3), 562–584.
- Spring, J. H. (2016). *Deculturalization and the struggle for equality: A brief history of the education of dominated cultures in the United States* (8th ed.). New York, NY: Routledge.
- Staurowsky, E. (2007). "You know, we are all Indian": Exploring White power and privilege in reactions to the NCAA Native American mascot policy. *Journal of Sport and Social Issues*, 31, 61–76.
- Stender, R. H. (2010). *Kū i ke ao: Hawaiian cultural identity and student progress at Kamehameha Elementary School* (Unpublished dissertation). Los Angeles, CA: University of Southern California.
- Sternberg, R. J., Lipka, J., Newman, T., Wildfeuer, S., & Grigorenkok, E. (2005). Triarchically-based instruction and assessment of sixth-grade mathematics in a Yup'ik cultural setting in Alaska. *Gifted and Talented International*, 21(2), 9–16.
- Takayama, B., & Ledward, B. (2009). *Hawaiian cultural influences in education (HCIE): Positive self-concept among Hawaiian students*. Honolulu, HI: Kamehameha Schools.
- Tibbetts, K. A., Kahakalau, K., & Johnson, Z. (2007). Education with aloha and student assets. *Hūlili: Multidisciplinary Research on Native Hawaiian Well-Being*, 4(1), 147–181.
- Thomas, S., Kana'iaupuni, S., Freitas, A., & Balutski, B. J. N. (2012). Access and success for students from indigenous populations. In J. C. Smart & M. B. Paulsen (Eds.), *Higher education: Handbook of theory and research*. New York, NY: Springer Science+Business Media.
- United Nations. (2009). *State of the world's Indigenous peoples*. New York, NY: Department of Economic and Social Affairs, United Nations.
- Wallerstein, I. (1996). Neither patriotism nor cosmopolitanism. In M. Nussbaum & J. Cohen (Eds.), *For love of country: Debating the limits of patriotism* (pp. 122–124). Boston, MA: Beacon Press,

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- Wilson, W. H. (1999). The sociopolitical context of establishing Hawaiian-medium education. In S. May (Ed.), *Indigenous community-based education*. Clevedon, UK: Multilingual Matters.
- Wilson, W. H., & Kamanā, K. (2006). "For the interest of the Hawaiians themselves": Reclaiming the benefits of Hawaiian-medium education. *Hūlili: Multidisciplinary Research on Hawaiian Well-Being*, 3(1), 153–181.
- Yosso, T. (2005). Whose culture has capital? A critical race theory discussion of community cultural wealth. *Race Ethnicity and Education*, 8(1), 69–91.
- Yazzie, T. (1999). Culturally appropriate curriculum: A research-based rationale. In K. Swisher & J. Tippeconnic (Eds.), *Next steps: Research and practice to advance Indian education* (pp. 83–101). Charleston, WV: ERIC/CRESS.
- Yazzie-Mintz, T. (2007). From a place deep inside: Culturally appropriate curriculum as the embodiment of Navajo-ness in classroom pedagogy. *Journal of American Indian Education*, 46(3), 72–93.

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Commentary

Where All Children Blossom: Cultural Advantage, Double Win, and Rich Cultural Learning Environments

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The article, “*Mobala i ka wai: Cultural Advantage as a Framework for Indigenous Culture-Based Education and Student Outcomes*,” by Shawn Malia Kana’iaupuni, Brandon Ledward, and Nolan Malone, represents an important story and study in Indigenous educational self-determination. Their positioning and findings of culture as an advantage in regard to positively influencing student outcomes in schools in Hawai’i is a story many of us in the field of Indigenous education have been waiting to hear. While qualitative research in the field has shown the benefits of culture-based education (CBE) to students’ cultural identity, self-confidence, and sense of belonging (Kawagley & Barnhardt, 2004; Kulago, 2016; Lee, 2015), there has been very limited quantitative research that demonstrates these significant connections to these areas in addition to outcomes related to college aspirations and connections to community (but see e.g., recent quantitative work on Native language and culture instruction by Van Ryzin, Vincent, & Hoover, 2016). Kana’iaupuni et al.’s work is groundbreaking, and I titled my Commentary using phrases from their article that I believe capture the magnitude of their work for the field of Indigenous education. I explain the significance of each phrase in the sections that follow.

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Cultural Advantage

Educational attainment and achievement for Indigenous students have notoriously been framed from deficit perspectives for many decades now (Lomawaima & McCarty, 2006; Tuck, 2009). To frame culture as an advantage is practically revolutionary and serves as a counternarrative to deficit-based research. Kana'iaupuni et al.'s statement, "Reframing Indigenous identities as cultural advantage creates counterhegemonic opportunities, giving voice to the expertise of elders and other cultural sources," illustrates the message that our stories as Indigenous people are vital sources of knowledge. Stories are our theories (Archibald, 2008; Brayboy, 2005), and as Archibald (2008) asserts, stories are our teachers. They represent our knowledge systems and our evolving cultures. In this sense, cultural advantage prioritizes our stories and knowledge and recognizes the fluidity of our cultures for informing and transforming Indigenous education.

Double Win

Kana'iaupuni et al. posit that CBE practices create a "double win" teaching environment where CBE is in congruence with effective teaching practices. Grounded in earlier work by Beaulieu (2006), Demmert et al. (2010, 2014), and Demmert and Towner (2003), they demonstrate the direct application of CBE in schools through the components of language, family and community, content, context, and assessment. In my work and conversations with many teachers, CBE is often viewed as an esoteric concept or even as just a metaphor (Lee, 2015). Teachers are unsure how to put it into practice, signifying the lack of such focus in their teacher training programs. They see it as "teaching culture," and it becomes a stagnant and static curricular topic. Kana'iaupuni et al. worked collaboratively with Hawaiian scholars and practitioners to develop a Hawaiian Indigenous Education (teaching) Rubric to map tangible teaching practices that are culturally based in Hawaiian contexts, making CBE palpable and concrete to identify and to put into practice for teachers. The scope of their study (62 schools, 600 teachers, and 2,600 students) is remarkable and provides large-scale evidence of the impact and effectiveness of CBE. Their findings provide further indication and support of the role CBE can play across cultural contexts and across ethnicities, thus creating a double win for students who benefit from both CBE and effective teaching.

Rich Cultural Learning Environment

Creating a rich cultural learning environment entails much more than honoring Native peoples on a specific day, week, or month. A school that embodies the culturally based values, knowledge, and practices of

Indigenous peoples throughout their mission, curriculum, pedagogy, assessment, and school climate is truly living culturally and creating a rich environment for learning (Lipka, 2002). Kana'iaupuni et al. found that even among Hawaiian-language schools, there was no effect of these schools on their student outcomes unless the language was taught through culturally rich methods, such as in the immersion schools. In other words, teaching the mechanics of Native languages does not automatically infuse culture if the language is taught only as a language, like a foreign language, devoid of culture, community, and worldviews. Their findings hit home the importance of integrating Indigenous knowledges, philosophies, and practices for any schooling context in order to inspire students' positive college aspirations, sense of belonging, self-efficacy, cultural affiliation, and connections to community.

Where All Children Blossom

In my heritage community (Diné), we value a practice called *k'é*, which is how a family and community support, care, love, and are responsible for one another's well-being. *K'é* creates positive relationships, builds sustainable communities, and ensures cultural continuity (Lee, 2016). The Hawaiian cultural advantage framework is an example of *k'é* in practice in the sense that the goal of education in this framing is to create educational systems where families, teachers, and community work together so that all children blossom from the roots of their cultural homelands. The authors' research marks the essential connections between home, school, and culture. More importantly, their research underscores our common visions and goals for all of our children to blossom.

References

- Archibald, J. (2008). *Indigenous storywork: Educating the heart, mind, body, and spirit*. Vancouver, BC: University of British Columbia Press.
- Beaulieu, D. (2006). A survey and assessment of culturally based education programs for Native American students in the United States. *Journal of American Indian Education, 45*(2), 50–61.
- Brayboy, B. (2005). Toward a tribal critical race theory in education. *The Urban Review, 37*(5), 425–446.
- Demmert, W., Hilberg, S., Beaulieu, D., Rawlins, N., Tharp, R., & Yap, K. O. (2010). *Indigenous culture-based education: Five rubrics*. Retrieved from https://www.academia.edu/14885470/Indigenous_Culture_Based_Education-Five_Rubrics
- Demmert, W., Hilberg, S., Beaulieu, D., Rawlins, N., Kamanā, K., French, K., & Johnson, F. T. (2014). *Indigenous culture-based education rubrics*. Retrieved from <http://educationnorthwest.org/resources/indigenous-culture-based-education-rubrics>

- Demmert, W., & Towner, J. (2003). *A review of the research literature on the influences of culturally based education on the academic performance of Native American students*. Portland, OR: Northwest Regional Educational Laboratory.
- Kawagley, O., & Barnhardt, R. (2004). *Education Indigenous to place: Western science meets Native reality*. Retrieved from www.ankn.uaf.edu/EIP
- Kulago, H. A. (2016). Activating Indigenous knowledge to create supportive educational environments by rethinking family, community, and school partnerships. *Journal of Family Diversity in Education*, 2(1), 1–20.
- Lee, T. S. (2015). The significance of self-determination in socially, culturally, and linguistically responsive (SCLR) education in Indigenous contexts. *Journal of American Indian Education*, 54(1), 10–32.
- Lee, T. S. (2016). The home-school-community interface in language revitalization: Canada and the United States. In S. M. Coronel-Molina & T. L. McCarty (Eds.), *Indigenous language revitalization in the Americas* (pp. 99–115). New York, NY: Routledge.
- Lipka, J. (2002). *Schooling for self-determination: Research on the effects of including Native language and culture in the schools*. Retrieved from <https://www.uaf.edu/mcc/award-recognition-and-oth/schooling-for-self-determination.pdf>
- Lomawaima, K. T., & McCarty, T. L. (2006). *“To Remain an Indian”: Lessons in democracy from a century of Native American education*. New York, NY: Teachers College Press.
- Tuck, E. (2009). Suspending damage: A letter to communities. *Harvard Educational Review*, 79(3), 409–428.
- Van Ryzin, M., Vincent, C., & Hoover, J. (2016). Initial exploration of a construct representing Native language and culture (NLC) in elementary and middle school instruction. *Journal of American Indian Education*, 55(1), 74–101.