



Experiential activity in a culturally relevant context increases student satisfaction and engagement in learning.

**ACKNOWLEDGEMENTS**

*Hawaiian Cultural Influences in Education* (HCIE) is a collaborative research project of Kamehameha Schools, the Hawai'i Department of Education, and Nā Lei Na'auao, an alliance of Hawaiian-focused public charter schools.

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For more HCIE information visit [www.ksbe.edu/spi/projects.php](http://www.ksbe.edu/spi/projects.php)

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**Endnotes**

- 1 When examining survey responses, statistically significant differences were found among teachers in these six school types.
- 2 This figure is based off the HiDOE Superintendent's Annual Report for SY 2007–2008, see [http://arch.k12.hi.us/state/superintendent\\_report/sar2008.html](http://arch.k12.hi.us/state/superintendent_report/sar2008.html) (Table 6 in Appendix).
- 3 For a detailed discussion of the rubric, see 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*, 5,67–90.
- 4 CREDE's five standards are (1) Joint productive activities, (2) Language development across curricula, (3) Contextualization, (4) Challenging activities and, (5) Instructional conversations. The teacher survey includes items from standards 1, 2, and 3. For more information on CREDE visit <http://crede.berkeley.edu/>
- 5 Cronbach's alpha is a statistic used to demonstrate the relationship among a set of variables. A high value represents greater confidence that items in a given set are asking about the same thing.
- 6 For more information on canonical correlation testing and internal reliability visit <http://www.statsoft.com/textbook/stathome.html>.

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KAMEHAMEHA SCHOOLS

**CULTURE-BASED EDUCATION**

MAY 2009

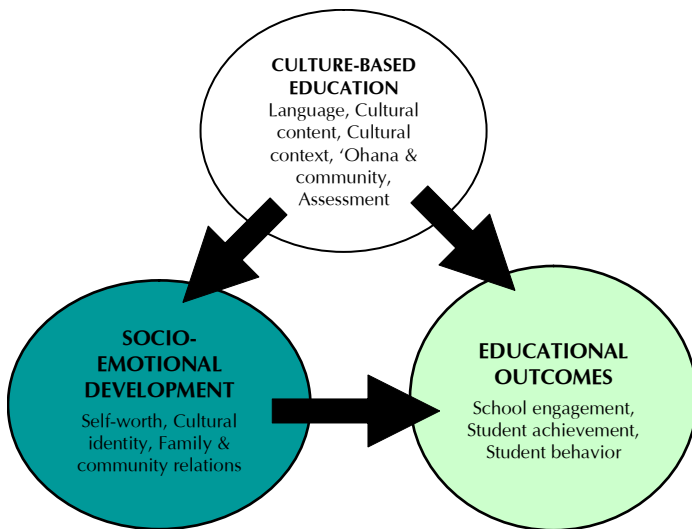
# Hawaiian Cultural Influences in Education (HCIE):

## Culture-Based Education among Hawai'i Teachers

By Brandon Ledward, Brennan Takayama, and Kristin Elia

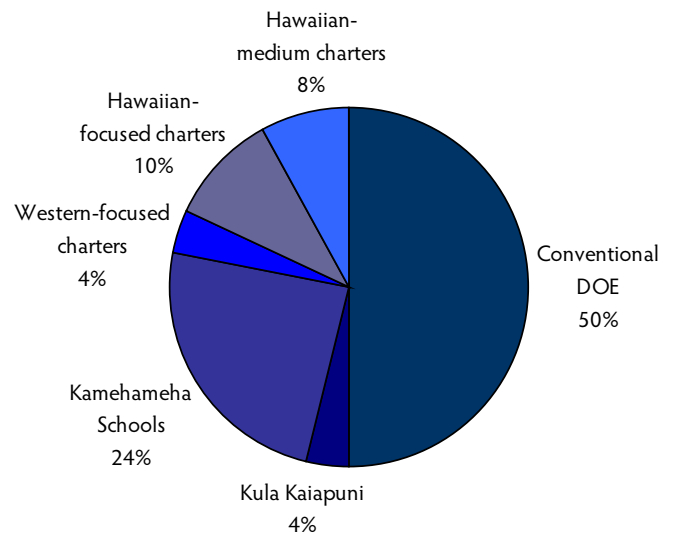
The HCIE study examines the relationship between Hawaiian culture-based educational (CBE) strategies and student outcomes. It is hypothesized that culturally relevant teaching and learning strategies will have a positive impact on students' socio-emotional development and educational outcomes. Teacher CBE practices may affect student educational outcomes directly or they may have an indirect effect as students' perceptions of themselves and their attitudes toward learning strengthen over time.

Figure 1: HCIE theoretical model



This report shares findings from a survey of 600 middle and high school teachers from 62 schools across Hawai'i. To account for philosophical and institutional differences, schools were categorized into six school types.<sup>1</sup> These include: conventional and Kula Kaiapuni (Hawaiian immersion) schools in the Hawai'i Department of Education (HiDOE), Hawaiian- and Western-focused charter schools, Hawaiian-medium charter schools, and Kamehameha Schools (see Figure 2).

Figure 2: Participating teachers by school type (N=600)



### WHY DOES CULTURE-BASED EDUCATION MATTER?

At the state, national, and international levels, CBE strategies are increasingly being seen as a promising means of addressing educational disparities between indigenous students and their peers. Native Hawaiians make up the largest ethnic group in the HiDOE's student population at 27.6 percent.<sup>2</sup> Beyond ancestry and culture, all students share a connection to Hawai'i that can be leveraged through CBE's emphasis on place-based, project-based, and hands-on learning.

The Hawaiian Indigenous Education Rubric (HIER) was designed in collaboration with a research advisory group to measure CBE use among teachers.<sup>3</sup> HIER measures critical indicators with a scale of None, Emerging, Developing, and Enacting across five domains: language, content, context, family and community, and assessment. For example, when responding to survey items about family involvement, teachers are considered “Emerging” in this indicator if they provide family members with information to support their child’s learning at home. On the other hand, they are considered “Enacting” if they integrate family, community members, and kūpuna (elders) directly into the learning experience for students.



Students set sail around Kona with the help of Nā Kālai Wa’a community members.

### WHAT ARE THE RESULTS OF THE SURVEY?

Analysis of the teacher data produced three main findings. First, the use of culture-based educational strategies can be found in different school types and among Hawaiian and non-Hawaiian teachers. Second, teachers who apply CBE strategies in greater amounts also utilize research-based ‘best practices’ in teaching more frequently. Third, culturally relevant approaches to learning can be measured effectively with an instrument such as the Hawaiian Indigenous Education Rubric.

**Q:** *Is it true that only ‘Hawaiian schools’ and Hawaiian teachers use CBE strategies?*

**A:** *No. These approaches are found in all school types, and some strong CBE users are non-Hawaiian teachers.*

Questions on the teacher survey correspond to items on the HIER. After weighting responses according to the scale, summative scores were calculated for each school type. These scores were then standardized to a 100-percent scale to allow comparisons to be made across the domains. Results show that Kula Kaiapuni, Hawaiian-focused charters, and Hawaiian-

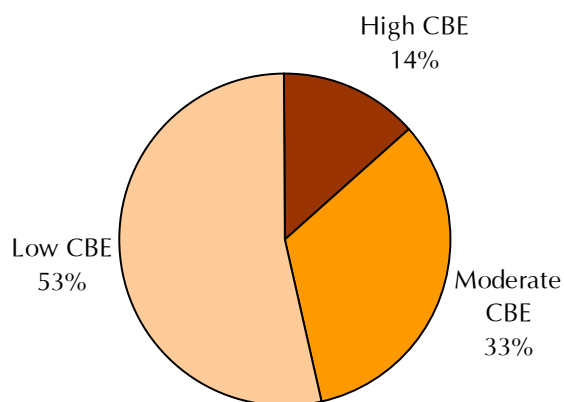
medium charters consistently score the highest across the CBE domains. Teacher scores for other school types indicate that CBE strategies are being used, however, to a lesser extent.

Table 1: Summative scores for HIER domains by school type

| School type |                        | Assess | Content | Context | Family | Lang |
|-------------|------------------------|--------|---------|---------|--------|------|
| DOE         | Conventional DOE       | 77.0   | 54.7    | 63.4    | 55.5   | 33.9 |
|             | Kula Kaiapuni          | 84.8   | 83.5    | 84.3    | 68.2   | 93.0 |
| KS          | Kamehameha Schools     | 80.8   | 66.0    | 69.5    | 54.7   | 54.2 |
| CHARTERS    | Western-foc. charters  | 85.4   | 51.9    | 60.9    | 55.4   | 31.4 |
|             | Hawaiian-foc. charters | 83.1   | 81.7    | 82.3    | 70.7   | 72.7 |
|             | Hawaiian-med. charters | 90.2   | 89.1    | 91.6    | 84.7   | 97.2 |

Scores for more intensive CBE use were created from questions corresponding to the HIER’s Enacting column. Teachers who scored above 75 percent of the total possible points in at least 4 out of 5 domains were labeled “High CBE Teachers.” Those that scored the same in 1–3 domains were categorized as “Moderate CBE Teachers,” and the remaining participants were coded “Low CBE Teachers.” The results show that just over half of the teachers surveyed utilize minimal amounts of CBE, a third are moderate CBE users, and 14 percent are high CBE users (see Figure 3).

Figure 3: Levels of CBE use among participating teachers (N=600)



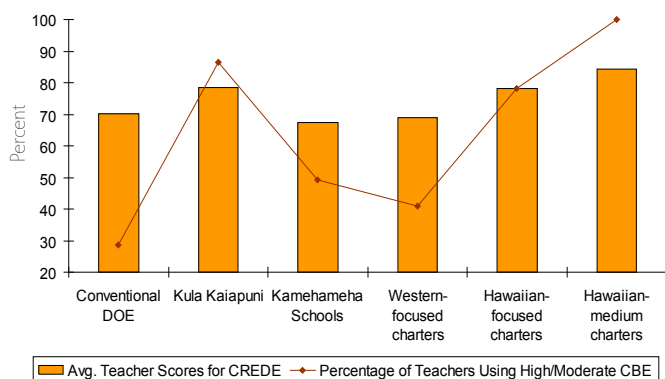
Examining teacher ethnicity, about a third (33.7%) of non-Hawaiians rank as “Moderate” or “High CBE Teachers” compared to 69.3 percent of Hawaiians. This suggests that teachers of any ethnic group can and do employ culturally relevant strategies with their students by drawing upon a shared sense of place, making explicit connections to Hawai‘i, and forming good relationships with the community.

**Q:** Do teachers in school types that use CBE strategies risk straying too far from best practices?

**A:** No, in fact the opposite is true. Teachers in settings where CBE is employed are more likely to draw upon effective standards in teaching.

The Center for Research on Education, Diversity and Excellence (CREDE) has defined five standards for effective teaching. Questions reflecting these standards were included in the teacher survey.<sup>4</sup> Although one could assume that teachers using highly relevant cultural strategies do so at the cost of conventionally known ‘best practices,’ we actually find a reverse trend. Results show that school types where greater CBE use is found tend to have teachers that use CREDE standards more frequently.

Figure 4: CREDE scores and CBE use by school type



As shown in Figure 4, teachers in Kula Kaiapuni, Hawaiian-focused charters, and Hawaiian-medium charters report greater use of ‘best practices’ in pedagogy. This may be because standards such as “contextualized learning” allow teachers to use cultural approaches to make learning relevant and meaningful for their students.



Working in the lo'i is a hands-on activity that is also culturally meaningful.

**Q:** Can culture-based education really be measured effectively?

**A:** Yes. In addition to verification by educators, statistical tests suggest the HIER is a reliable tool.

Internal reliability tests were performed on the teacher data to ensure that the HIER is statistically sound. Cronbach’s alpha<sup>5</sup> results for the five domains range from .64 to .94, indicating a strong cohesion of items. Likewise, canonical correlation tests between each domain and the CREDE set of items were relatively high ranging from .52 to .78.<sup>6</sup> Again, these relationships show that CBE strategies make use of broad standards for effective teaching through culturally relevant programming.

Table 2: Correlation test results for the HIER

| Domain             | N   | Raw $\alpha$ | Std $\alpha$ | Correlation with CREDE |
|--------------------|-----|--------------|--------------|------------------------|
| Language           | 598 | .94          | .94          | .52                    |
| Family & community | 597 | .80          | .80          | .74                    |
| Content            | 585 | .78          | .78          | .78                    |
| Context            | 585 | .75          | .76          | .75                    |
| Assessment         | 592 | .64          | .71          | .58                    |
| All items combined | 578 | .93          | .93          | -                      |

### SUMMARY AND NEXT STEPS

Culture-based educational strategies may hold promise for increasing student outcomes by transforming cultural values, place, family, and community into resources for learning. Data show that teachers who use CBE approaches are found across different school settings and among Hawaiians and non-Hawaiians. Moreover, schools with greater concentrations of CBE teachers also apply ‘best practices’ in educational pedagogy. Finally, statistical tests of the Hawaiian Indigenous Education Rubric reveal that it is an effective tool for measuring CBE use.

The next step in the study is to examine the relationship between CBE use and various student outcomes. Preliminary analyses reveal that students whose teachers use greater amounts of culture-based educational approaches are more likely to report higher rates of cultural knowledge and practice, community attachment and giveback, school engagement, and positive self-concept.