"E HO‘OMAU!"

A STUDY OF HAWAI‘I TEACHERS NAVIGATING CHANGE THROUGH GENERATIVE PRAXIS

A DISSERTATION
SUBMITTED TO THE SCHOOL OF EDUCATION AND THE COMMITTEE ON GRADUATE STUDIES OF STANFORD UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

Zanette Joelle Johnson

December 2013
© 2013 by Zanette Joelle Johnson. All Rights Reserved.
Re-distributed by Stanford University under license with the author.

This dissertation is online at: http://purl.stanford.edu/sb466ck2013
I certify that I have read this dissertation and that, in my opinion, it is fully adequate in scope and quality as a dissertation for the degree of Doctor of Philosophy.

Shelley Goldman, Primary Adviser

I certify that I have read this dissertation and that, in my opinion, it is fully adequate in scope and quality as a dissertation for the degree of Doctor of Philosophy.

Raymond McDermott

I certify that I have read this dissertation and that, in my opinion, it is fully adequate in scope and quality as a dissertation for the degree of Doctor of Philosophy.

Na'ilah Nasir

Approved for the Stanford University Committee on Graduate Studies.

Patricia J. Gumport, Vice Provost for Graduate Education

This signature page was generated electronically upon submission of this dissertation in electronic format. An original signed hard copy of the signature page is on file in University Archives.
Abstract

This study aims to make visible the practices of a group of teachers who are part of a community shift in Hawai‘i, described here as the “Hawaiian Indigenous Movement for Education and Native Intelligence” (HIMENI). Revitalization of indigenous knowledge systems and practices has grown over the past thirty years in Hawai‘i, and HIMENI teachers further that work across the islands in schools that are public, independent, rural and urban. Their students learn through varied combinations of ʻŌlelo Hawai‘i (Hawaiian Language), Hawaiian Creole English (called Pidgin), and Standard English. The aims and outcomes that HIMENI teachers pursue are rooted in Hawaiian worldviews, and are aligned with Hawaiian cultural values; in some cases they differ greatly from the aims of conventional schooling. The teachers in the study were members of three cohorts within an inservice teacher education program designed to assist HIMENI teachers in attaining licensure. During the five-year span of the study, eight themes emerged through participant-observation, videotaping, interviews, classroom observations and analysis of teachers’ reflective writing. The eight themes illuminated specific principles by which HIMENI teachers found ways to deepen the alignment of their teaching practices with Hawaiian values. These culturally-rooted themes continue to guide them as they share local knowledge and indigenous technologies from a Hawaiian perspective, and as they lead their students through encounters with globally-valued knowledge and digital technologies. Through an ethnographic lens, this dissertation views the eight emergent themes (principles for discernment and action) as a conceptual framework that the HIMENI teachers use
generatively—to develop new knowledge out of lived experience—as they navigate their complex contexts for teaching. Analysis of elements in their conceptual framework reveals parallels between locally-recognized concepts and broadly-recognized constructs from the learning sciences that inform teacher practice, such as: ecological models of action, embodied cognition, communities of practice, adaptive expertise and design thinking. Taken as a whole, the set of practices and processes used by this group of HIMENI teachers may be seen as model for “generative praxis”—an orientation to knowledge that powerfully promotes dynamic knowledge development for teachers and their K-12 students alike. Standing alongside "content knowledge" and "pedagogical content knowledge” —two widely-recognized categories of essential knowledge in conventional teaching—generative praxis gives us a new term to describe a third type of knowledge that is clearly visible: contextualized, iterative knowing-in-action. The teaching profession must acknowledge and cultivate generative praxis (by any name) if teacher educators and teachers are to successfully navigate the rapidly diversifying language, culture, knowledge(s) and routes to knowledge that are now part of US contexts for learning in the 21st century.
About the title…

"E HOʻOMAU!"
A STUDY OF HAWAIʻI TEACHERS
NAVIGATING CHANGE THROUGH GENERATIVE PRAXIS

The title of this study was inspired by the words of a kupuna (elder) who was raised on the island of Niʻihau, living and speaking in a Hawaiian way.*

When asked what she felt was most important for students and teachers of HIMENI schools to focus on, she gave this instruction: “E hoʻomau, e hoʻomau, e hoʻomau!”

In the Hawaiian language, the phrase “E hoʻomau!” functions as an imperative verb, exhorting the person addressed to “Continue!” In this case, the encouragement is to continue practicing the indigenous and ancestral traditions of Hawai‘i.

It is understood in the Niʻihau community that if one continues to practice traditional skills for living, continues to speak the language, and continues to follow the correct ways of interacting, then the cultural worldview can take root in the youngest generation, and things may again become pono (in good balance).

* The ʻohana Niʻihau is a treasured Hawaiian community with roots on the northernmost inhabited island of the archipelago. The Hawaiian language has been spoken continuously on Niʻihau since
No nā mamo, a me nā poʻe aloha ʻāina

E hauʻoli nā ʻōpio o Hawaiʻi nei
ʻOli ʻē! ʻOli ʻē!
Mai nā aheahe makani e pā mai nei
Mau ke aloha, no Hawaiʻi

Ka hui o "Hawaiʻi Aloha,"
na Makua Laiana
Acknowledgements

Gratitude to the Akua that gives us the breath of life; gratitude to the ‘āina that sustains this beautiful and fragile dance of livingness in balance.

Gratitude to the ancestors who brought forth the elegant and sophisticated traditions of our ku‘u pae ‘āina o Hawai‘i; gratitude to the Kānaka Maoli who ho‘omau, practicing and passing on the wisdom and worldviews of their kūpuna a mau a mau.

Gratitude to all the peoples of Earth who treasure, embody, and reinterpret their indigenous traditions, finding ways to protect their lands and lifeways, and to sustain the heart of each indigenous knowledge system through their ways of speaking, ways of living and ways of relating.

Gratitude to the many lineages, lands, languages, and ‘ohana that continue to nurture the traditions of love and respect for all of life; gratitude to those who have guided my path, taught and mentored me, loved and cared for me (family, that’s you), and helped me to know the value in caring for all my relations.

To the members of the HIMENI movement: for more than a decade, we have paddled together, and I have been transformed by your aloha, the teachings of your kūpuna, and the ‘ike ‘āina o Hawai‘i nei. Mahalo for sharing your vision and your values with me— and for entrusting us with your stories; he makana nō.

E mau ke ea o ka ‘āina i ka pono!

To my advisor Shelley Goldman: I would like to express my warmhearted thanks for your steadfast support of this project and its message of epistemological diversity. Your trust and your patience during this process are gifts I will always be grateful for.

To the many dear ones who have accompanied me along this path: I count each one of you a blessing. The abundance of support, compassion and love you have given so freely has sustained me; my gratitude pours forth like the waters of Kāne.

Mahalo, a me ke aloha mālamalama.
E lawe i ke aʻo a mālama, a e ʻoi mau ka naʻauao.

He who takes his teachings and applies them increases his knowledge #328 (Pukuʻi, 1983, p. 40).

~

Readers, take whatever inspiration that you can from this work, but also take care to respect what belongs to the indigenous traditions of the Hawaiian people. Please forgive any error in fact or representation within this work; if there are mistakes herein, I accept full responsibility for them and apologize for any offense caused.

Receive this work as an offering—intended only to bring benefit to those who inspired it, and to those who encounter it. While the outcomes of the study might have been different in another context or with another set of participants, the message is what it was meant to be. It is my hope that understanding of the deeper meanings embedded in this inquiry will continue to grow through time as the spiral leaves of experience unfurl.
Table of Contents

Abstract ...........................................................................................................................................v
Acknowledgements .........................................................................................................................ix
Table of Contents ...........................................................................................................................xiii
List of Figures ................................................................................................................................... xv
List of Images ..................................................................................................................................... xvi

Introduction ........................................................................................................................................1
  Context and diversification..................................................................................................................4
  Epistemological diversity and testing ...............................................................................................7
  Knowledge diversification and technological routes of access to knowledge.................................9
  Research context and claims .............................................................................................................10

Chapter 1: Background - The Hawaiian Indigenous Movement for Education and Native Intelligence .........................................................................................................................19
  Four Key Losses of the Hawaiian Nation .......................................................................................23
  Goals of the HIMENI Movement ...................................................................................................27
  Impact of the HIMENI Movement ..................................................................................................33

Chapter 2: Standpoint and Methods .................................................................................................37
  Standpoint of the Researcher ............................................................................................................37
  From community member to researcher .......................................................................................43
  Methods and study development ....................................................................................................46
  Data sources ....................................................................................................................................49
  Evolving the findings of the study ....................................................................................................51
  Analysis and Coding .........................................................................................................................53
  Protecting community anonymity ....................................................................................................60
  Reflections on Methods ....................................................................................................................62

Chapter 3: Awakening to the Journey - HIMENI teachers discover and (re)define their work .........................................................................................................................65
  Introduction .................................................................................................................................65
  First Session: Waipiʻo Valley on Hawaiʻi Island ...........................................................................68
  Second Session: ʻĀhalanui on Hawaiʻi Island ............................................................................81
  Third Session: Waimea on Kauaʻi Island ....................................................................................99
  Fourth Session: Mokulēʻia on Oʻahu .......................................................................................114
  Fifth Session: ʻŌʻokala on Hawaiʻi Island ................................................................................125
  Sixth Session: Kaʻulupūlehu Ahupuaʻa on Hawaiʻi Island .........................................................138

Chapter 4: HIMENI Teachers’ Conceptual Framework - Eight Emergent Themes .......................................................................................................................153
  Introduction .................................................................................................................................153
  Emergent themes as the teachers’ conceptual framework .............................................................156
  Waʻa HIMENI: Teachers’ Conceptual Framework .....................................................................158
  Eight Emergent Themes .................................................................................................................160
  Themes as a Conceptual Framework ............................................................................................314
# List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Teachers’ brainstorm of Hawaiian ways of knowing and learning</td>
<td>89</td>
</tr>
<tr>
<td>2</td>
<td>Hawaiian cultural values informing HIMENI teacher practice</td>
<td>154</td>
</tr>
<tr>
<td>3</td>
<td>Visual metaphor describing the relationship between eight emergent themes and <code>ea</code>, the goal of the HIMENI movement</td>
<td>158</td>
</tr>
<tr>
<td>4</td>
<td>Parallels noted between themes in teachers’ conceptual framework and constructs from the learning sciences</td>
<td>160</td>
</tr>
<tr>
<td>5</td>
<td>Key relationships in Hawaiian learning</td>
<td>176</td>
</tr>
<tr>
<td>6</td>
<td>Cultural “pieces” essential for integrative Hawaiian learning</td>
<td>225</td>
</tr>
<tr>
<td>7</td>
<td>Visualization of a knowledge structure that is decontextualized, suggesting limited accessibility for problem solving</td>
<td>274</td>
</tr>
<tr>
<td>8</td>
<td>Visualization of a knowledge structure that is based on an interdependent network of meaning and experience; accessibility for problem solving is indicated</td>
<td>276</td>
</tr>
<tr>
<td>9</td>
<td>Relationship between the teaching cycle (in generative praxis) and the continuously-developing mental model of the teaching context</td>
<td>300</td>
</tr>
<tr>
<td>10</td>
<td><code>Makawalu</code> and <code>Makaʻala</code> phases overlaid on a process model for design thinking</td>
<td>308</td>
</tr>
<tr>
<td>11</td>
<td>The HIMENI teachers’ labels for the steps of their creative cycle</td>
<td>310</td>
</tr>
<tr>
<td>12</td>
<td>‘Flow between theory &amp; experience’ as a feature of generative praxis</td>
<td>332</td>
</tr>
<tr>
<td>13</td>
<td>Adaptivity as a feature of generative praxis</td>
<td>333</td>
</tr>
<tr>
<td>14</td>
<td>Iterativity as a feature of generative praxis</td>
<td>334</td>
</tr>
<tr>
<td>15</td>
<td>Improvisation as a feature of generative praxis</td>
<td>334</td>
</tr>
<tr>
<td>16</td>
<td>A representation of the dynamics of generative praxis at a particular moment in time</td>
<td>338</td>
</tr>
<tr>
<td>17</td>
<td>Enduring learning theories’ shared features with generative praxis</td>
<td>339</td>
</tr>
<tr>
<td>18</td>
<td>The emergence of generative praxis as a construct within HIMENI practices</td>
<td>342</td>
</tr>
<tr>
<td>19</td>
<td>Developing generative praxis in diverse contexts for learning</td>
<td>346</td>
</tr>
<tr>
<td>Image</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>1.</td>
<td>“Kamehameha’s Double Canoe.” Painting by Herb Kawainui Kāne</td>
<td>16</td>
</tr>
<tr>
<td>2.</td>
<td>The coastline, as seen from the lookout over Waipi’o, Hawai’i Island</td>
<td>68</td>
</tr>
<tr>
<td>3.</td>
<td>Hakalaoa and Hi’ilawe Falls, Hawai’i Island</td>
<td>75</td>
</tr>
<tr>
<td>4.</td>
<td>HIMENI students learning water safety on the wa’a, Hilo Bay</td>
<td>76</td>
</tr>
<tr>
<td>5.</td>
<td>Mālama ‘āina to prepare an old lo‘i kalo (taro patch) for planting</td>
<td>77</td>
</tr>
<tr>
<td>6.</td>
<td>Preparing ti leaf to use for cooking food</td>
<td>78</td>
</tr>
<tr>
<td>7.</td>
<td>Lo‘i kalo in Waipi’o Valley, Hāmākua District, Hawai‘i Island</td>
<td>79</td>
</tr>
<tr>
<td>8.</td>
<td>Pūhala tree, Puna District, Hawai‘i Island</td>
<td>81</td>
</tr>
<tr>
<td>9.</td>
<td>On the way to visit Kālehuamakanoe, Kalalau Valley, Kaua‘i</td>
<td>99</td>
</tr>
<tr>
<td>10.</td>
<td>Puka mai ka lā—the sun comes through, Wai‘anae Mountains, O‘ahu</td>
<td>114</td>
</tr>
<tr>
<td>11.</td>
<td>Negotiating structure and bilingual terms for papahana (curriculum)</td>
<td>121</td>
</tr>
<tr>
<td>12.</td>
<td>The endemic shrub ‘ākia, in ‘Ō‘ōkala, Hawai‘i Island</td>
<td>125</td>
</tr>
<tr>
<td>13.</td>
<td>A papahana curriculum plan, created by several HIMENI teachers</td>
<td>133</td>
</tr>
<tr>
<td>14.</td>
<td>Pāhoehoe (lava) catches the sunlight at Ka‘ulupūlehu, Hawai‘i Island</td>
<td>138</td>
</tr>
<tr>
<td>15.</td>
<td>HIMENI teachers’ huaka‘i to plant native trees in dryland forest</td>
<td>140</td>
</tr>
<tr>
<td>16.</td>
<td>Ki‘i (petroglyphs) carved into smooth rock at Ka‘ulupūlehu</td>
<td>141</td>
</tr>
<tr>
<td>17.</td>
<td>Hōkūle‘a, the double-hulled sailing canoe that changed Hawaiian history</td>
<td>143</td>
</tr>
<tr>
<td>18.</td>
<td>Cultivated lands at Hanalei Valley, Kaua‘i</td>
<td>146</td>
</tr>
<tr>
<td>19.</td>
<td>Burial ground at Naue, Kaua‘i, disrupted by unlawful construction</td>
<td>147</td>
</tr>
<tr>
<td>20.</td>
<td>Sign at Naue, Kaua‘i, reminding visitors how to respect the sacred site</td>
<td>148</td>
</tr>
<tr>
<td>21.</td>
<td>HIMENI teachers led by Ni‘ihau aunties, going to collect pūpū shells</td>
<td>150</td>
</tr>
<tr>
<td>22.</td>
<td>Ko‘a Holomoana, Kohala District, Hawaii‘i Island</td>
<td>151</td>
</tr>
<tr>
<td>23.</td>
<td>A kuahu (altar) where ho‘okupu (offerings) have been placed</td>
<td>193</td>
</tr>
</tbody>
</table>

* Image 1 is a painting reproduced with permission. Images 14 & 18 were taken by HIMENI teachers; Image 17 is a historical photo from the Polynesian Voyaging Society. All other photos by author.
Introduction

The days of the one-room schoolhouse are gone. The factory-schooling methods that served Americans\(^1\) from the industrial era through the 1960s now serve only to sustain a flagging status quo. The repertoire and pedagogical “vocabulary” of conventional schooling may not have changed, but the nation has. Teachers are like emergency responders after a flood—on the scene and ready to serve, but aware that they alone don’t have the resources needed to fully assist the ones they came to help. Teachers do have an audience with the young generation, and they have the intent to make a difference. What can teacher educators offer that will make a real difference in teacher practice—one that makes a difference in students’ experience of the value of school?

In 2011, the Teacher Education Division of the American Educational Research Association (AERA Division K) invited scholars in the field of teacher education to submit “problem statements” about the most critical issues they were facing in the field.\(^2\) The body of statements that thousands of members submitted were analyzed and found to cluster around three key themes, paraphrased as follows:

1. Selection of candidates able to work with students of diverse backgrounds and learning preferences
2. Design of teacher preparation to help teachers in a variety of contexts and conditions
3. How to enable teachers to contextualize and enact teaching practices in a variety of contexts.

---

\(^1\) All references to “Americans” or “America” in this paper refer to the United States and its residents specifically, not to North America, Central America or South America.

\(^2\) This “personal communication” came via email from the leadership of AERA’s Division K to the entire body of members in March 2011.
The convergence among teacher educators’ statements of the most critical problem in their field is telling. With the rapid demographic diversification taking place in the United States has come a diversification of language proficiency among students, and the current era is also unique in terms of the rapid diversification of knowledge and access to knowledge provided by technology. With all of this potential for diversity among students and among knowledge itself, how can teachers be prepared for the vast permutations of context that they may encounter during their professional life in schools?

This dissertation brings the insights of an indigenous knowledge system in conversation with the challenges of the US’ educational mainstream; it aims to make a contribution to the field of teacher education by casting new light on the orientation to knowledge and the pedagogical approaches that can “upshift” the profession of teaching to deal with rapid diversification.

Profound changes in the demographic and technological profile of the US population have created three critical changes that affect those who choose the teaching profession:

1) Diversification of language

2) Diversification of culture, and

3) Diversification of knowledge(s) and routes of access to knowledge

---

3 The interconnected phenomena of language diversification, cultural diversification and the diversification of knowledges (as well as the routes of access to knowledge through new technology) cannot be understated as factors influencing US schools (Banks, 2004; Riche, 2000). Immigration and globalization together contribute to the changing human geography of 21st century America (Frazier & Tettey-Fio, 2006), and the digital infrastructure created by new technologies shapes knowledge old and new, as well as the knower (Corbett & Vibert, 2010; Goodwin, 2010b; Jenkins, 2007; Mishra & Koehler, 2006; Ophir, Nass & Wagner, 2009). International and indigenous learners bring worldviews, cultures and languages to the classroom as resources for teaching and learning (Moll, Amanti, Neff & Gonzalez, 1992) and the “new literacies” which today’s children and teachers must navigate in order
One thing seems clear: continuing to follow conventional methods of teacher preparation are based on models of knowledge and schooling that originated in the nineteenth century will not assist us in preparing teachers to adapt to the vast permutations of possible contexts for learning that are ever-growing; nor will they assist teachers in helping their students cultivate twenty-first century learning outcomes. Rather than being a study of teacher performance or impact, this dissertation is a story of teacher learning; it is essential that our systems of professional education “learn” how to overcome the weight of past convention and teach teachers for the realities of the world that the children are growing up in.

Witnessing the longstanding norms that persist in teacher practice (since the beginning of US educational conventions the mid 1800s), it is critical in our era of rapid diversification that we ask: “How can teachers learn to teach in ways that are different from how they were taught?” Our strategic, pedagogical responses to this essential question must reach and influence the practice of teachers across the professional continuum from beginner to veteran if we care about students’ ability to encounter schooling as a meaningful experience.

Given the increasingly complex contexts for teaching, the research questions examined in this study focus on the kinds of knowledge and practice that teachers need to navigate America’s changing learning ecologies. While this study seeks to inform the geographically-distributed community of educators and teacher educators to be fluent in the repertoires, cultures and communities around them differ significantly from those required in past generations (Banks et al., 2007; Gee, 2000; Gutiérrez & Rogoff, 2003; Mahiri, 2004).

Bronfenbrenner’s theory (2005) was the first to suggest an “ecological” view of activity and learning, in which every act is seen in relationship to the set of factors in the surrounding system; knowing and doing are not individual acts—they emerge from a context and mutually influence that context. I use the term “learning ecologies” both here and in the title, referring to the entire systems of which teachers are a part, and which their activity is to be understood.
in the United States, the research questions explored in this project are fundamentally rooted in a particular place: *ka pae ʻāina o Hawai‘i*, the Hawaiian archipelago. The ʻ*iʻini* (desire) to pursue these questions came directly from the people and the contexts where the research took place, thus the research must first be imagined and understood within those contexts, though it is my belief that the findings can appropriately, have relevance beyond it. The research questions of the study are as follows:

1) How can teacher educators prepare teachers for the complex permutations of contexts for teaching that they will encounter over the span of their professional career?

2) How can teachers learn to teach differently than the ways in which they were taught?

**Context and diversification**

Education in the United States at the beginning of the twenty-first century has become a curious mixture of high-stakes testing, standardization, scripted curricula and nationwide ʻCommon Core State Standards’ on the one hand, and on the other, a push toward use of now-ubiquitous digital technology to customize learning and enhance STEM opportunities in pursuit of “twenty-first century learning outcomes” like creativity, innovation, flexibility, and global awareness.

The tug-of-war between these two approaches will likely continue for some time, just as the debates over teacher evaluation and compensation burn fiercely on. Within the field of teacher education, however, a new sort of problem has emerged that will soon trump many of these other concerns—how to prepare teachers for the incredible diversity of teaching contexts they will likely encounter during the span of their professional career.
Journalists, economists and policymakers frequently point out the impacts of rapid diversification in this era of globalization, technological shift, global instability and climate shift, yet culture is rarely addressed as the critical point of impact that it is. If, as Swidler asserts, culture can be described as the repertoire of strategies for action that a community draws from (Swidler, 1986), then surely it makes sense to consider culture as we frame and reframe the problems of our era which require us collectively and individually to act.

Bandura points out how culture is still the central pivot point around which global innovation is changing modern life:

With growing international embeddedness and interdependence of societies, and enmeshment in the Internet symbolic culture, the issues of interest center on how national and global forces interact to shape the nature of cultural life. (2001, p. 17)

Be it positive or negative, the macro-level trend toward rapid diversification in language, culture, knowledge and access to knowledge creates micro-level impacts on peoples’ lives by shaping identities, outcomes and opportunities. More than ever before, the experiences and the ways of knowing that young American learners bring is diverse; students’ storylines (Nasir, Hand, Shah & Ross, 2013), language categories (Whorf 1941, 1956) and cultural repertoires (Gutiérrez & Rogoff, 2003) differ vastly from one another— and often from the teacher as well.

Developing new teachers’ fluency at navigating this diversifying landscape of schooling is not just a matter of professional or personal survival. Teachers are the primary agents who frame, orchestrate and mediate the models of knowledge and learning that children and youth encounter in school— models that students will either
reject, resist or reproduce in their own lives and relationships (Wortham, 2005; Nasir, Hand, Shah & Ross, 2013). Enduring the churn of educational reform (Tyack & Cuban, 1995), teachers persist in their patterns of pedagogical decision-making (Wasley, 1991; Guskey, 2002). Even when challenged to change by new research and policy, teachers’ professional conceptions are resistant to change (Bolster, 1983) since they remain in the thrall of their early experiences as a student (Lortie, 1975) and find it challenging to transform their practices.

As Feiman-Nemser asserts in her 2001 paper, changing schools boils down to a simple proposition: “If we want schools to produce more powerful learning on the part of students, we have to offer more powerful learning opportunities to teachers (p. 1013).” Feiman-Nemser goes on to suggest that such learning opportunities must not cease with preservice education or mentoring during the induction years; teacher learning opportunities must be varied, targeted and powerful, stretching across the entire professional life of a teacher.

Calls to action from Darling-Hammond (2010), Zeichner (2005a, 2005b), and Hammerness et al. (2007), proclaim the urgency of responding to diversity in schools. However, the practical strategies and grand research agendas for the field of teacher education do not yet acknowledge the presence of epistemological difference as a critical factor that teachers should be prepared to detect and actively negotiate. How can this be, when the mainstream of educational practice evaluates schools and students on the basis of their performance on standardized, decontextualized testing—a practice that requires students to comprehend and navigate the school’s worldview as well as their own if they are to “achieve.”
Epistemological diversity and testing

At one time in America, physical appearance was thought to serve as a proxy for diversity, but no longer; students participate in multiple, overlapping communities of practice, mixing, sharing and shaping the various languages, worldviews, subcultures and repertoires that they experience from their unique positionality. In order to be equitable and effective, today’s teachers must acknowledge that the knowledge(s) at play in their communities are heterogeneous.

Consider for a moment the student of Polynesian ancestry whose science teachers insist that she is wrong for persisting in her belief that the sun moves across the sky, rather than staying in one spot. While it may seem obvious what the ‘correct’ answer is on a test, a teacher must be able to recognize that this perceived error may involve much more than a test question; the student’s sense of value and identification with the cultural beliefs that surround that orientation to the sun may be at stake. As Ed Hutchins reported in his studies of Micronesian navigation (1983, 1986), it is tremendously efficacious to navigate with the body as the central fixed point for triangulation; there are many types of cultural cognition that carry enduring value for insight and survival. Without awareness of the dynamics that might underlie such a fixation on an ‘incorrect’ answer, a teacher might misjudge the capabilities of the individual (Greenfield, 1997). By insisting that the heritage belief is unacceptable and must remain invisible in the school context, the teacher sends the message that student’s cultural matrix is less than valid; the proper place for such an alternative epistemology is tidily subducted under the dominant narrative. While there may be no malicious intent on the part of the teacher, the cumulative effect on the student over
time remains the same, adding to layers of historical and cultural trauma (McCubbin, Ishikawa & McCubbin, 2008) that undoubtedly have effects on individual performance over time.

A series of studies (Greenfield, 1997; Shaw, 1997; Solano-Flores & Nelson-Barber, 2002; Solano-Flores & Trumbull, 2003;) examines the cultural validity of standardized assessments, finding that language differences have huge impacts on testing performance, even when the targeted knowledge is present in the test-taker.

Solano-Flores and Nelson-Barber are clear that, even though students clearly and consistently stumble over test questions that are biased toward the testmaker’s point of view, when it comes to making tests that try to avoid these pitfalls, “no valid generalizations regarding culture can be made based on criteria such as ethnicity, country of origin, native language, or in what state students live” (p. 567). The need for new paradigms in evaluation is well-documented by researchers (Solano-Flores & Nelson-Barber, 2001; Solano-Flores, Ruiz-Primo, Baxter, & Shavelson, 1991; Solano-Flores & Trumbull, 2003; Solano-Flores, Trumbull & Nelson-Barber, 2002) and recognized, yet the professional preparation of teachers continues to be organized around the dominant model of standardized testing and, more recently, the Common Core State Standards. Teachers cannot not rely on stereotypes and approximations if they are to guide their students toward higher performance on achievement tests; teachers must build awareness of the heterogeneity in knowledge systems that is just below the surface veneer of standardization, and they must develop genuine relationships with the learners in their context and community.
Knowledge diversification and technological routes of access to knowledge

Those teachers who are able to overcome the “demographic divide” (Gay & Howard, 2000) between themselves and their students, and who learn to create classroom atmospheres that do not suppress heterogeneous knowledge systems still face a major challenge: digital culture. Knowledge(s) and the routes of access to knowledge are shifting and sprouting ever-faster; teachers need time to get familiar with new technologies, discover their value, and interpret them creatively through instruction (Russell, Bebell, O’Dwyer & O’Connor, 2003).

Technology is one of the routes to knowledge that is adding to complexity in our world, and certainly also to the teaching profession. Using technology for productivity and instruction in schools is a key target, but tomorrow’s teachers must stretch even further than those of today. Jenkins (2007) suggests that technology “skills” will not suffice where a deeper level of technological literacy is required; teachers need to be able to challenge their students using simulations, real performances, judgement and appropriation, multi-tasking, distributed cognition, transmedia storytelling, navigation across modalities, and negotiation of norms across communities. Teachers must become fluent in the arts of technological literacy if they are to lead students along a path of integrity in an increasingly-participatory digital culture that is constantly proliferating and complexifying.
**Research context and claims**

I came to this project as a community member who was interested in the fundamental question of how it is that teachers learn to change their practices. I had been welcomed and invited to join the Hawaiian Indigenous Movement for Education and Native Intelligence (HIMENI) as a member of a newly forming school. The project was full of dedicated parents and teachers who had extremely clear visions of the kind of learning community they wanted to create. The vision of the HIMENI movement was strongly focused on educational outcomes and rarely used political imagery or languaging unless conscience demanded direct political action to mālama ʻāina (care for and defend the land). Even though the most fundamental aim of the HIMENI movement was ea (self-determination and sovereignty), a goal that ought to have political implications when reached, the HIMENI communities did not often speak of it as such; I have chosen to follow their lead in framing the movement using language describing what they are creating, rather than what they are working against.

As I began slowly to adapt to my role as a teacher at a new school in a new land (far from my Oregon home), my teaching often became blurry in moments of crisis followed by “auto-pilot” mode, in which I would retreat to the automatic. I noticed that regularly, when I started to feel overwhelmed outside of familiar teaching patterns, I noticed how I would stumble back to the defaults and the ‘safe’ ways of doing that didn’t require as much thinking. My colleagues were generous with me since I hadn’t grown up knowing the ways and places of Hawai‘i, but I couldn’t

---

5 HIMENI is an acronym evoking the word “hīmeni,” to sing, “as in a song of praise” (Puku‘i & Elbert, 1957). In my mind, the imagery evokes a line from the beloved song “Hawai‘i Aloha” in which the youth of Hawai‘i are rejoicing with happiness and song: “E hau ‘olī e na ʻōpio o Hawai‘i, ʻolīʻe, ʻoli ʻē!” Indeed, the youth of Hawai‘i and many generations to come will be joyful when the HIMENI movement achieves its goal of ea, self-determination in education and beyond.
understand why, again and again, I found myself doing things as a teacher that I knew weren’t the best choices for this context.

We faced a lot of challenges as we worked together to create a whole new kind of learning experience; one that incorporated Hawaiian values, knowledge and technology alongside globally-recognized ‘ike (understandings). Watching my colleagues and speaking with them, I knew that I wasn’t the only one who experienced this phenomenon of automatic ‘takeover’ and we wondered about it together. When the path opened up to attend Stanford and study how teachers learn, I chose it, hoping to be able to assist my colleagues at school and in numerous HIMENI programs, by bringing back research and resources to inform their growth.

After leaving my community and returning to it regularly, I felt such a love and appreciation that my commitment to assist only deepened. As I found out more about the particular historical facts of indigenous communities being ‘overstudied’ and taken advantage of in extremely hurtful ways, I decided that my research would follow a different vein, pursuing research questions that were specifically of community concern and potential community benefit. Steering clear of the academic habit of critique, I decided to adopt a strengths-based stance (Kana‘iaupuni, 2005) and say nothing “negative” or critical about the research subjects; there was plenty to be learned from what they were doing successfully that could (appropriately) be interpreted and shared with a wider audience. To preserve my own sense of ethical integrity, I took the position that if my role as researcher ever came into conflict with my role as community member, I would prioritize the community benefit and take action accordingly.
When it came to the question of ethical integrity in the community, I had a strong feeling that, given the small size and tightly knit nature of the HIMENI community, the IRB did not provide sufficient protections. Anonymity would not ensure confidentiality, so I took steps to disguise the identities of research participants by creating composite characters and intermingling details of at least three participants’ lives and perspectives into each character. As a person who was once a member of the community, once I began my transition into the research world, I made a practice of looking for, acknowledging, and getting comfortable with my own biases. In the spirit of making my perspectives explicit (Denzin & Lincoln, 2011), I here list the foundational assumptions of this dissertation:

1) Teachers need a better way of handling the complexity we are destined to face over the span of our careers

2) One good way to support teachers in teaching better is to change teacher professional education across the continuum

3) Teacher education can be improved in ways that prepares teachers to be responsive to the many contextual factors and permutations of diversity that we will encounter in the schools of today and tomorrow.

This dissertation provides an evidentiary foundation that points toward some of the ways in which teacher education can be transformed to address increasing diversity in population and knowledge transformation. By going deeply into the Kanaka Maoli context of a movement in which the ecology of teaching and learning is actively being shaped by its participants and their vision for the future, this study aimed to focus in how HIMENI teachers were approaching and negotiating the process of questioning and seeking deeper alignment between their values and practices. Following five years of data collection and a year of analysis, I feel
confident in proposing that the HIMENI teachers used a kind of teacher knowledge that is different than general contextual knowledge, content knowledge or "pedagogical content knowledge."6 The kind of knowledge they sought to develop in their teaching:

1) was the same kind of knowledge that they wanted their own students to cultivate

2) called for more involvement from the learner/practitioner than behavioral responses or simple digestion of pre-existing information

3) did not require a label or a signal in order to be identified as valid or worth focusing on (could be tacit).

4) had, as its foundation, embodied sensory inputs gathered within the learning ecology; whether by direct experience, analogy or story, at some point, embodied processing of contextualized action and interaction played a role in knowledge development.

5) appeared to be strengthened by making (or challenging) connections and/or relationships with what was known before; this was facilitated through a matrix of relationships that involved mutual learning and teaching.

6) initially appeared to be similar to "adaptive expertise," in that it progresses along trajectory that is different than that of routine knowledge; further examination suggests it shares other aspects of adaptive expertise as well, such as the anticipation of ill-structured problems.

7) cannot be acquired solely through information delivery, only cultivated through experience and reflection-in-action, (essentially the same principles through which these teachers practiced it and sought to orchestrate its development in their students.)

In this study, I refer to this type of knowledge cultivated by the HIMENI teachers as “generative praxis,” a noun that describes an orientation to knowing and

---

6 See Shulman (1986, 1987); pedagogical content knowledge is discussed in greater detail in Chapter 5.
learning that frames embodied, contextualized experience as a dynamic source of information to be interpreted and applied for meaningful purposes. As a descriptive term, generative praxis may also be used to describe the use of any processes for knowledge development that cultivate or sustain such an orientation.

Generative praxis may have an important place beside content knowledge and pedagogical content knowledge in the professional preparation of teachers. It provides a possible solution to the challenges of ever-expanding diversification because, as a way of knowing that is attuned to context, people and activity; it allows for new solutions to consistently emerge in response to conditions. If teachers received professional preparation that intervened in their default notions of teaching and learning, they would begin to develop their own generative praxis, learning explicitly from their teaching contexts in an ongoing way (throughout their career) about how to navigate the dilemmas that diversity invariably yields.

As you read, please keep in mind that this study is written for many different audiences. The Hawaiian audience will recognize that the Pidgin has been translated into Standard American English so that the wider education community can understand it. Indigenous audiences will note that it is not written as a personal tale; I weave multiple voices throughout Chapter 3 not because I seek to appropriate them, but because I seek to privilege them.

One might ask whether my choice to embark upon this particular study in this particular place was mere convenience. I could honestly respond that it would have been far more convenient to do the research elsewhere, unencumbered by the ethical considerations of researching indigenous members of my own home community and
professional life. The more significant reply, however, would be to point out that one of the most challenging aspects of conducting research in the learning sciences has been that design experiments, while a step up from the context-reduced laboratory experiment that is the mainstay of cognitive science, are not able to generate the kinds ecosystem-wide changes that are required to generate and document changes in learning that are distributed across the context (Brown, 1992). In this case of a community that seeks to transform its own institutions and approaches to schooling wholesale we have much more than a “model”—we have an organically-motivated and internally-managed instantiation of the kind of system-wide, comprehensive change that can give rise to (and make visible) changes at every grain-size or level of analysis from the individual to the macro-community.

There is a notable convergence between the perspectives of Kānaka Maoli and sociocultural theorists that seems to set the stage for this dialogue of parallels between the two unrelated, unmINGled traditions. In their study of learning, both groups seem to direct their attention in a sustained way to the power of practice (what is done, rather than what is said or believed); they also share a similar devotion to the importance of context (the setting for action, including other actors and ambient influences) in the interpretation of practice. I will say no more here, as I believe that the significance of these parallels will emerge clearly later on.

To orient the reader, I here provide a brief summary of the sections to come. Chapter 1 is an introduction to the history of Hawaiian education as HIMENI teachers saw it, followed by the researchers’ conceptual framework about generative adaptivity.
Chapter 2 is the methods chapter in which I describe my choices and actions as a researcher to gather and interpret the data of this story.

Chapter 3 uses a style of portraiture, following Sarah Lawrence-Lightfoot to give an introduction to six teachers’ contexts, through the lens of their experiences in Kulanui A’o, a teacher licensing program.

Chapter 4 is an analysis of eight themes that HIMENI teachers continually pointed toward as guides while navigating difficult choices about how to use their time and resources as teachers. Since they frequently referenced aspects of wa’a (Hawaiian voyaging canoe) as a metaphor describing their movement and their work, the canoe seemed like a resonant image to illustrate the themes and their relationships.

The painting “Kamehameha’s Double Canoe” depicts the revered ali’i Kamehameha and his entourage; it also shows the classic form of the Hawaiian wa’a kaulua, a double-hulled canoe. (Painting reproduced by permission of the Estate of Herb Kāne).
Chapter 5 is a summary of the pedagogical practices the HIMENI teachers used, and a discussion of the generative orientation to knowledge that is also reflected in HIMENI teacher practice as well as educational theory. Impacts of adaptation or reinterpretation of such a model in other contexts is also discussed.

The dissertation concludes with a summary of the findings and a research agenda for the future, relating to the importance of re-creating social institutions and practices to nurture epistemological diversity—a key for human survival in this era of rapidly changing ecologies.
Chapter 1: Background - The Hawaiian Indigenous Movement for Education and Native Intelligence

Kaʻōiwi, a fifth grade teacher, recounted the following incident to her peers during an afternoon staff meeting:

We were down at Honoliʻi Beach Park with Papa Liko (a group of 1st & 2nd graders) on the way back from a huaka‘i (field trip). Pākea started picking up rocks from the shore and throwing them, one after the other, into the ocean. I went over to him and told him to stop. He followed me back over to where most of the other students were playing during lunchtime. Ten minutes later, I look over and there he is again with a handful of rocks! I waited to see what he would do, and sure enough, he makes his way over to the shore and starts tossing them out into the water again.

“Pākea, I asked you once already to stop. What are you doing?”

“Throwing rocks.”

“We don’t throw rocks at school or over here; the pōhaku [rocks] are living beings just like you and me. Would you want someone to just pick you up from your house and put you somewhere else without asking?”

“No. But I don’t get it. My tūtū [grandparent] always says that rocks are alive too. In my class last week we were just studying about how trees and plants are alive because they grow. In the video we got to see really close, sped-up pictures of them growing and that was awesome. They said that rocks are not alive because they don’t grow. So if they’re not alive, then it’s okay for me to throw them, ya?”

“I’m glad you told me what was confusing you. It is a little bit tricky because a lot of people don’t believe that rocks are alive, but pay attention and you’ll see for yourself in time. Ask your tūtū when you go home. I’ll talk to your kumu [teacher] about it and maybe he’ll bring it up with your class. For now, you can stop throwing rocks and come over with us.”

“Yes Aunty.”
Kaʻōiwi explained to the staff that her first thought was: Do I tell him that the video was wrong? What if his tūtū sees things one way, but his parents think differently? What if he gets that question on next year’s standardized test? How do I handle this? She realized that it wasn’t a simple matter of giving him the “correct” information as she saw it; she had to make room for more than one perspective. If there were multiple worldviews at play in this student’s life, who was she to say what was right and what was wrong for him? Yet there wasn’t anybody else stepping up to stop him from displacing those rocks, an act which was clearly causing discord. In that moment, Kaʻōiwi negotiated with herself and made a decision to stop the behavior; she asked the teaching team: Was it pono (proper, correct) what I did? What else could I have done?

Pākea’s teacher spoke up to share how he’d brought up the video with his class and asked for their manaʻo (thoughts); the first and second graders were now polling family members and would graph the results. The staff went on to express their desire to create a recurring feature of the curriculum each year where the students, new and old, face the question of differing worldviews. Critical incidents of Kaʻōiwi’s type were not uncommon; commonalities caused no stir, but teachers often found themselves facing dilemmas about how to act when it came to the areas of difference between the dominant worldview and Hawaiian perspectives. One of the reasons they’d come together to create this school was that existing programs didn’t consider Hawaiian ways of knowing as valid; intolerance and ethnocentrism had no place here either. The consensus was that teachers as well as students ought to have better tools and questions to navigate the daily situations of life when it came to this kind of
difference. They left the meeting wondering what kind of learning experiences they could create to help themselves and their students to be prepared to “handle” living in contexts where multiple worldviews exist and interact—within individuals as well as across families and communities. Careful negotiation of decisions like this would determine whether they were able to create a school that was coherent with Hawaiian values and open to all-comers who deeply cared about Hawaiʻi.

The group of teachers at that staff meeting had, three years before, started an independent school and were actively developing new elements of the curriculum to address the needs of the students and community. Two times as many students had applied for their program than they could accept, and community participation in their program continued to grow. In 2008, more than ten HIMENI schools could now be found on four islands, and teachers were adopting HIMENI practices at diverse schools, regardless of type, statewide. The HIMENI schools were found mostly in communities with large percentages of Hawaiian students (anyone that is a descendent of Kānaka Maoli who lived in Hawaiʻi prior to Cook’s arrival in 1778 is considered Hawaiian here); the HIMENI schools serve students and families of all ethnicities.

The Hawaiian Movement for Education and Native Intelligence had been brewing in Kaʻōiwi’s town for decades, ever since the period in the early seventies known as the Hawaiian Renaissance, when people started to organize around teaching ʻŌlelo Hawaiʻi (Hawaiian language) in the schools (Wilson, 1999, p. 96). After years of work by activists, the adoption of Article X of the Hawaii State Constitution in 1978 (Lee, 2011) made it a requirement that the State would “promote the study of Hawaiian culture, history and language” in all of its public schools, specifically
encouraging the incorporation of “community expertise” as a source for Hawaiian education. Many people were delighted by this shift in policy, since for decades, there had been an explicit and pervasive disdain for nā mea Hawai‘i (all things Hawaiian) at the level of state government and policy. Thirty-five years later, the provisions of Article X have still not been realized, but its passage galvanized many Kānaka Maoli with hope, and a focused movement did take hold.

In its time, Article X stood out as a landmark because Hawaiian language and culture had not been fully recognized or respected in its own land since the missionary days. As Benham and Heck explain:

By the end of the 1820s, the missionaries had encouraged the Hawaiian rulers to mandate schooling for all children. As might be expected, this produced the rapid adoption of New England values and structures explicitly revealed through schooling…its religious and political philosophies taught new ways of thinking about self and status, land and individual property, and cultural value (1998, p. 35).

Those new patterns of thinking were “either/or” ways that suppressed and devalued Kanaka Maoli “both/and” ways; they were the root of what the HIMENI teachers often label as “Western” beliefs or values of the “dominant culture.” In the Hawaiian context, there is no doubt that schools were the primary environment through which this reversal of values was engineered; school curricula were explicitly structured to suppress and to constrain indigenous lifeways through banning of language and heritage practices, and the inculcation of Christian behavioral norms in dress and interpersonal interaction. Schools made no effort to disguise their mission; they effectively replaced native ways of knowing with non-native ways inside schools (Benham & Heck, 1998, p. 32). Outside the school, native intelligence persisted through language, through the family, and through land-based practices like fishing.
and kalo (taro) farming. While some may consider the existing practices, stories, language and traditions of the Hawaiians to be only a remnant of what came before, it is a treasured remnant, one that the communities and the teachers of HIMENI schools seek to honor, perpetuate and ho'oulu (cause to grow and flourish).

To understand the strength of the collective desire to revitalize Hawaiian language, culture relationships and practices, one must first have a clear picture of the scale and nature of what was lost across the pae ‘āina o Hawai‘i (entire archipelago). While words can do little justice to describe the emotional impacts, I point here toward the causes of four key losses that the HIMENI teachers are working to recover: 1) the loss of family networks and the ‘ike (wisdom) embedded in genealogical relationships of all types, 2) loss of sense of place that comes with separation from one hānau (the sands of one’s birth) and the genealogical relationships embedded there, 3) loss of sense of self-worth as a people that first gained foothold during the social upheaval after contact, and 4) loss of the ku‘ana ‘ike (worldview) that was embedded in a profoundly sophisticated and vast oral tradition.

**Four Key Losses of the Hawaiian Nation**

Hawai‘i was in an era of change in the late 1700s when the ali‘i (chief) Kamehameha came to power, achieving what no other ali‘i could do; through extended war campaigns, he brought most of the islands together under one chiefly standard (kāhili) signifying his reign (Kamakau, 1961, p. 142-158). Previously linked by genealogical connection, language and tradition, this was the first time the islands of Hawai‘i were politically unified. Population was at a historical peak and social shifts were already underway at the point when Hawai‘i’s dramatic transformation is
typically marked: 1778, the year of Captain Cook’s arrival and the introduction of metal technology as well as guns. Within forty-five years of Cook’s landing, 80% of the population had died from disease (Kame‘elehiwa, p. 81); by 1900, the percentage of the Kanaka Maoli family lost had risen to 92-95%, (Osorio, 2002, p. 10; Stannard 1989). The widespread devastation created a vacuum of faith; many began to question whether traditional religion and ritual were still effective; the kapu system that ritually organized all of daily life was left behind.

Disease was one of four key factors that transformed Hawai‘i. The second was the change in the system of land use, marked vividly by the Great Māhele, the division and privatization of land that took place from 1845-1850 after the massive population loss left taro patches and homesteads untended (Osorio, 2002, p. 44-47). Dislocation from the homelands that were their lifeblood created an incalculable strain on the people.

Edward Kanahele explains the significance of place for Kānaka Maoli:

As a Native Hawaiian, a place tells me who I am and who my extended family is. A place gives me my history, the history of my clan, and the history of my people. I am able to look at a place and tie in human events that affect me and my loved ones. A place gives me a feeling of stability and of belonging to my family, those living and dead. A place gives me a sense of well-being and of acceptance of all who have experienced that place (Kanahele, cited in McGregor, 2007, p. 5).

The Hawaiian culture is one in which relationship to place is the primary organizer of activity and identity. Even now, Hawaiians continue to seek out and use “the relationships to places as a tool for cultural survival” (Kana‘iaupuni & Malone, 2010, p. 292).

Yet another shadow was cast on Hawaiian well-being by the legacy of white
supremacy in the forms of pseudo-scientific views of racial superiority and the
doctrine of manifest destiny that dominated during the decades after contact. As
Osorio puts it, “the Hawaiian nation of the nineteenth century was compromised by an
ongoing discourse that held the Natives and their nation as inferior to the whites and
their nations.” (2002, p. 252). Over time, this supremacist discourse was made
structural such that Hawaiians “were manipulated into a position of actual
inferiority,”(Osorio, 2002, p. 252); a position which has persisted across societal
indicators (Kana‘iaupuni, Malone & Ishibashi, 2005; Liu & Alameda, 2011) into the
present day. White supremacist ideology is no longer explicit, however the inheritance
of that era is identifiably implicit— within institutional structures of government,
power and the wage-labor economy, as well as internalized within individuals of all
ethnicities.

The uneasy (but long-lasting) marriage of religious indoctrination and literacy
must also be accounted for in any story of Hawai‘i’s transformation. Policies of
aggressive assimilation were pushed upon Kānaka Maoli through schooling and a
Bible-based curriculum that sought to replace traditional values with the values of the
missionaries. In the earliest years, Hawaiian ali‘i (local rulers) viewed reading and
writing as a powerful new technology and welcomed it (Chun, 2011, p. 105); however,
with acceptance of the new literacy came a set of values and religious indoctrination.
This new value structure discouraged the Hawaiian language to the point that it was
seen as a liability to teach it to one’s children (Benham & Heck, 1998; Kame‘elehiwa,
1992a); many children were beaten in schools for speaking their home language.
Similarly, cultural practices including hula were actively discouraged by the matrix of
religious and literacy-driven values that was enmeshed within the new “learning ecology” of colonial schools. Disease, dislocation, racism and colonial education were only some of the critical factors that contributed to the profound losses experienced by Hawaiians in their native lands. One cannot say that “the story is told” (haʻina ʻia mai ana ka puana) with these few words, but were any one of these four factors to have followed a different pathway, the Kingdom of Hawaiʻi might still have be its own independent nation today, as it was in 1893 at the time of the overthrow of its constitutional monarchy (Liliʻuokalani, 1898/2009).

In cases around the world of disruption by colonial powers, indigenous land, lifeways, material culture, ceremonies, mythic stories and such are not the only things lost. Battiste (2008a) points out the impacts of “cognitive imperialism” that causes the loss of a “complete knowledge system with its own languages, with its own concepts of epistemology, philosophy, and scientific and logical validity” (p. 500). Like the burning of the libraries of Alexandria that many are aware of, the loss of an indigenous knowledge system lays waste to treasures whose value is immeasurable—treasures of knowledge that organize the activity of life, that make it nuanced, elegant, adaptive and satisfying. The loss of family, land, worldview or knowledge system is not only personally devastating, it creates a cultural wounding (Cook, Withy & Tarallo-Jensen, 2003) that echoes across generations, impacting emotional health as well as physical well-being (Carlton et al., 2006; Cummins et al., 1999; Salzman, 2001; McCubbin & Marsella, 2009; Rezentes, 1996; Williams & Berry 1991; Else, Andrade & Nahulu, 2007).
When HIMENI teachers talk about their sense of urgency in needing to change the system, the intention to heal cultural wounds that have been causing suffering for ages is woven into that desire for transformation. By choosing to invest directly in the movement through their commitment to teaching, HIMENI teachers make clear their belief that schooling is an important first place to begin the collective healing.

HIMENI teacher Lauloa Franklin wrote a reflection log saying that often he feels as if his students have “Post-Traumatic Schooling Disorder,” meaning that it is unreasonably difficult to get them interested in things that ought to be fascinating. Lauloa hypothesizes this PTSD is due to of the legacy of the schools they attended as young children that taught them there was nothing “for” them in school, and that turned them off to learning altogether. The cultural wounding of aggressive assimilation continues into the present day; the HIMENI teachers are motivated by their vision of a new system that heals and revitalizes through cultural knowing.

**Goals of the HIMENI Movement**

A central goal of the HIMENI movement is to reach a cultural place of “ea” or breathing freely. A chief aim among the teachers is to develop the ability to create learning experiences that make sense from a Hawaiian perspective, and that help learners to make sense of their world as it is—and gain tools to match their aspirations to transform it. The hope of self-determination through education, well-being and *pono* (righteous balance) motivates the teachers, as well as the communities that support and encourage the HIMENI programs.

---

7 *Ea* is used and translated diversely depending on contextual nuance; its positive connotations can mean anything from “air” to “sovereignty” and “self-determination.”
While working steadfastly on producing a video to share their work with the larger HIMENI community, one group of teachers found it important to formally discuss and articulate their critique of conventional schooling. They agreed that the following factors are key contextual features in the conventional schooling context which inhibit the kinds of relationships that lead to quality Hawaiian learning:

- **Assessment systems:**
  Decontextualized tests determine academic opportunity and student life chances

- **Capitalism:**
  Impact of economic class on access to resources; tracking according to ethnicity/class/color limits life chances

- **Number of students:**
  Factory schooling model; emphasis on quantity rather than quality, in teacher relationships with too many students

- **Competition:**
  Meritocracy, absence of joy and pleasure in learning; too few incentives for collaboration/cooperation

- **Aim to sustain the status quo of social structure:**
  Economic/social/political system defines some knowledge as valid, other forms not valid or low status

- **Individuality:**
  Individual achievement and ownership of knowledge is assumed to develop independent of the collective whole

- **Emphasis on accepting knowledge from other sources:**
  Absence of respect for knowledge created by students and communities; truth comes from elsewhere

- **Unhealthy foods:**
  Many foods are not pono because they promote distracted behaviors and lead to chronic disease; valued family members are lost at an early age

- **Staying inside:**
  Lack of a place for developing students’ knowledge through experience; little connection to place or to people is involved
-Relationships between people in the school are hierarchical:
  Unequal power relationships are established in school, creating strained relations and stress; these patterns may stay imprinted for a lifetime

-Narrow definition of intelligence as cognitive-only:
  Literacy and numeracy are valued, but intelligence is narrowly defined in [individualized]\(^8\) cognitive terms; little if any respect for alternative views or types of intelligence; only those with certain types of gifts are valued as “gifted” (even though everyone has gifts)

What unifies the HIMENI teachers across their many schools, communities, and language choices as they address these identified barriers is a return to cultural values as seen in the ways of the ancestors: hoʻi i ka piko — return to the piko, the center/source: the umbilical cord that connects to past generations.

During a workshop session dedicated to their expressions of their collective kuleana (mission), one group of H"IMENI teachers prepared the following statement, as an expression of the point of view of their aims:

This is about Ea, bringing our educational system back to a place of local control where we learn to adjust our traditions to be useful in modern times and where there is a concerted effort to take us back to a time of ‘breathing’ – the land, the sea, the language, the culture, the people. We return to the piko [center or umbilical cord] by action-oriented solutions based on hoʻoponopono [active negotiation for the purpose of healing]. The process of transformational education is our makana [gift] to the world.

Later, this same group contextualized this vision for their era (repeated below) alongside that of others whose time had come before, developing a timeline of (overlapping) time periods that describe historical eras of education in Hawaiʻi:

\(^8\) Throughout this document, square brackets are used in quotations to add words that were implied by the speaker or context, yet perhaps not said directly in the passage quoted. Hawaiian language words used by the speaker are also placed in brackets, since s/he didn’t actually give a translation.
400 AD to 1776
Ka Wā Eā – the time of breathing freely
Traditional Hawaiian Education based on nature and the needs of the ‘ohana [family relationships] and ‘āina [land-based relationships].

1776 AD to 1950
Ka Wā Huikau – the time of confusion
The foundation of Traditional Hawaiian Education is rocked by external forces that forcibly overturned our educational system, confusing our people, pitting one against another, and forcing us to choose a life that is either foreign or Hawaiian.

1898 AD to 1977
Ka Wā ‘Ākea – the time of wide/broad questioning and assent
Our kūpuna (past generations of Hawaiians) began to question this paradigm shift in the form of ‘Ōlelo No’eau and passed on the kuleana to mākua and ‘ōpio to challenge the current educational system they saw as killing our language, culture, traditions and, by extension, our people. This was a time of both acceptance and resistance.

1977 AD to Present
Ka Wā Ho‘i – the time of action and return
The HIMENI movement is about ea, bringing our educational system back to a place of local control where we learn to adjust our traditions to be useful in modern times, and where there is a concerted effort to take us back to a time of ‘breathing’ – the land, the sea, the language, the culture, the people. We return to the piko by action-oriented solutions based on ho‘oponopono. The process of transformational education is our makana to the world.

Present to Future
Ka Wā Eā Hou – the time of breathing freely once more
We are coming full circle and in the future we will create an educational system that is able to relate to the world in a way that honors our past, forgives those who did bad to us, and gives those who embrace our lifestyle a chance to breathe. What will that educational system be like? What features and structure will it have; what practices will it promote?

The HIMENI teachers’ choice to locate and position their work in this manner is consistent with a Hawaiian worldview—embedded in the language itself—that points to the past as a source of wisdom when the future is uncertain. Historian Lilikalā Kame‘elehiwa, describes the Kanaka Maoli conception of time:
The past is referred to as *Ka wā ma-mua*, or “the time in front or before.” Whereas the future, when thought of at all, is *Ka wā mahope*, or “the time which comes after or behind.” It is as if the Hawaiian stands firmly in the present, with his back to the future, and his eyes fixed upon the past, seeking historical answers for present-day dilemmas. Such an orientation is to the Hawaiian an eminently practical one, for the future is always unknown, whereas the past is rich in glory and knowledge. (Kameʻelehiwa, 1992b, p. 22-23)

This sheds light on why the teachers’ history of education in the Hawaiian Islands leads up to “the time of going back” or “*ka wā hoʻi***;” back to the values, language, cultural traditions and practices that are known to be essential for life.

As they teach and set their students’ and schools’ course for the future (*ka wā ea hou*) the HIMENI teachers explain that they are now “deciding for ourselves what is worth teaching and passing on, as informed by ancestral tradition— and going beyond that in the context of today.” In this process, they repeatedly conceptualize themselves as navigators, or *hoʻokele*. In a written reflection about her process of reflection and decision making about what is *pono*, Kaʻōiwi shares her insight:

We are all steersmen for the canoe.
We will steer our people and our children.

The destination toward which they are navigating the “canoe” of the HIMENI movement is currently known only as “*ka wā ea hou***, a time of breathing freely once more in the contexts of learning, and of life. In making this transition, a small collective of HIMENI teachers selected the following written recommendations to be included as part of a message designed for families at their schools. After hours of *hoʻopāpā* (debate and negotiation), this group of teachers agreed upon the following subset of cultural values that they believe will be significant to enact if their communities are to collectively progress toward the envisioned and prophesied *ea*. 
“As Hawaiian educators, we are setting course... envisioning clearly where it is that we want to go next (regardless of the particular vehicle or wind that takes us there), and how that journey will feel as we go. So many factors have confused and/or complicated our notions of education in the 21st century, one thing we know for certain; our kūpuna’s [ancestors’] practices are what we want to guide us.”

“When we see these ten/twelve values\(^9\) enacted in the practice and structures of Hawaiian Education, we will know that we are on course—in alignment with the ways of the kūpuna and the ancestral wisdom that they have transmitted to us. We will not just be teaching Hawaiian content information, but really embodying and living from a Hawaiian perspective. When we see these values enacted around us in our community, then we will feel the strength of many paddling with us.”

_Aloha_

Love, in all things

_'Ohana/One Hānau_ (genealogical link to land)
Value of relationships, familial/genealogical, ecological etc.

_'Aipono, ‘Aiola_
Healthy foods, eating for health/life

_Hana_
Hands on practice and action of many types

_Makawalu_
Consideration of many perspectives when choosing to act

_Ea_
Self-determination

_Mālama_
Taking care of relationships with kānaka, akua, and ‘āina (people, deity and spiritual realms, and land)

_Ho'oponopono_
Making things right; using cultural processes for resolving issues

_Na‘au_
Using the na‘au (gut, intuition) for discernment and guidance

---

9 Ten values were selected and two, Aloha and Mahalo ‘ia were added as encompassing bookends with special significance and applicability in the practice of all other values.
ʻIke ʻĀina
Learning directly from the land

Hoʻomaha
Rest, after work is done

Mahalo ʻia
Gratitude, in all things

The values above were selected and articulated as a part of a project to distribute information to the extended ʻōhana (family) of stakeholders that are connected to the HIMENI movement. The ideas essentially evoke and express a set of values by which the stakeholders may know and assess whether their progress as a movement is pono; the teachers also stated that these particular values are appropriate for the progress of the community at large to be evaluated, in their shared quest to become pono. While these values overlap only slightly with the HIMENI teachers’ conceptual framework (for teaching) that is detailed in Chapter 4, they are an expression of what the HIMENI teachers see as essential for being pono in all the contexts of life.

Impact of the HIMENI Movement

In addition to the assessment of cultural values, HIMENI schools and teachers are generally evaluated in more conventional ways. School data about attendance and scores on state tests are reported, just as for other schools. A number of organizations have conducted research within HIMENI schools, and about the practices of HIMENI teachers. Collectively, the data suggests that while the HIMENI practices are unique and culture based, they also are successful according to diverse indicators (Greenberg et al., 2003; Kanaʻiaupuni, Ledward & Jensen, 2010; Meltzer, 2011; Tharp, Estrada,
Dalton & Yamauchi, 2000; Zins, 2004). The steps forward and the direction that the HIMENI movement is going has indeed been making a difference for Hawaiian (including part-Hawaiian), and non-Hawaiian children in diverse school settings. The high-profile presence of the HIMENI movement has led educators and non-profits alike to seek involvement and understanding through cultural education (Nā Lau Lama Report, 2006) as they actively develop ways of counteracting the consistently low levels of Hawaiian student performance on customary measures within conventional schools (Kana‘iaupuni, Malone & Ishibashi, 2005; Kamehameha Schools, 2009).

A series of studies published in 2009 and 2010 by Kamehameha Schools’ Research & Education Division explicates a model for understanding the relationship between what they refer to as the practices of “Culture-Based Education” (CBE) and improved learning outcomes for students (Kana‘iaupuni, Ledward & Jensen 2010; Ledward, & Takayama, 2009a; Ledward, & Takayama, 2009b; Ledward, Takayama, & Elia, 2009; Ledward, Takayama & Kahumoku, 2008; Takayama & Ledward 2009). The theoretical model that was tested in the Hawaiian Cultural Influences in Education series showed that indeed, teachers and schools using CBE are clearly able to boost positive educational outcomes and to contribute to learners’ socio-emotional development. The model also finds that socio-emotional development in turn contributes to further positive educational outcomes. The pedagogical methods associated with Culture-Based Education (such as cultural identity development and student engagement) have been successfully used by the HIMENI teachers to exert a positive impact on educational and other outcomes, and also were observed in the teaching environment to overlap with enactment of the well-researched CREDE

Other researchers have found that the practices of schools and teachers using HIMENI approaches are beneficial for the resilience of students, as understood through the framework of student assets (Tibbetts, Kahakalau, & Johnson, 2007; Tibbetts, Medeiros & Ng-Osorio, 2009). Data also shows that the strategies for bilingual and language-immersion education used in the contexts of HIMENI schools are having a positive impact on student learning, though more assessment tools are needed to gain a clear picture (Ng-Osorio & Ledward, 2011). HIMENI teachers’ incorporation of language in their methods is consistent with approaches known to have positive effects on student learning in other indigenous communities (Pacific Policy Research Center, 2010)

If the goal of the HIMENI teachers is to bring about ea through education, then one may justly assume that they are on the right track. While there are questions about the reasons behind the striking benefits of culturally-responsive and culturally-driven learning, (is it inclusion of culture or an artifact of enhanced contextualization of the curriculum? cf. Lipka 2004, Lipka & Nelson-Barber, 2008), for the teachers of HIMENI it doesn’t matter—regardless of the mechanism, the youth of Hawai‘i and the descendants of Kānaka Maoli stand to benefit.

Kaʻōiwi wrote the following words in her reflection journal, expressing her high aims for the HIMENI movement:

I can see that acculturation has made a big impact on the very psyche of the Hawaiian people but I also see that a healing is taking place. This movement is for Hawai‘i, and it is also to change the heart of the world.
Chapter 2: Standpoint and Methods

**Standpoint of the Researcher**

Thirteen years ago, I came to Hawai‘i from my birthplace of Oregon after being offered a job teaching at a private school. Having never been to Hawai‘i before, I didn’t know of its relatively recent history as an independent nation. Living there, I went through all the stages of culture shock, grew to understand speakers of Hawaiian Pidgin, and discovered (through an unsettling series of events that exposed my own areas of unconsciousness) that I had my own variety of prejudicial default assumptions. During my decade of training as a scientist, I had developed habits of privileging thought over action and I consistently caught myself translating other peoples’ perspectives into my own terms. Even though I had experienced life on the margins of America’s racialized culture, I had to acknowledge that my privileges were indeed great (growing up with enough food to eat, access to experiential learning at my school, etc.)— and equally great were the unconscious empiricist assumptions I picked up and carried with me.

Before the first school year was finished, I had connected with a group of educators and parents who were a part of the Hawaiian Indigenous Movement for Education and Native Intelligence; I was welcomed into the circle of indigenous Hawaiian community. As I sought to attend to and extinguish my cultural and scientific biases, the patience, generosity and teachings that were shown to me by certain members of the Hawaiian community helped me to root myself as a human being who had a clearer path for growth than ever before. My gratitude for what was shared with me freely by the kūpuna and the members of the HIMENI movement is
profound. Over the course of the last thirteen years I have come to deeply love the land, the people and the spiritual realms as described and experienced through Hawaiian epistemology. While my understandings continue to grow (as living things do), being introduced to the interconnectedness of the Hawaiian worldview has changed me and will continue to influence me at a fundamental level for the rest of my life—in every community of practice that I participate in, and in every land where I may travel.

During that first year, I was communicating my gratitude to one of the HIMENI teachers for how I had been welcomed and included by the movement’s members. He said to me jovially, “Hey sister, if you like grab [a] paddle and hoe (paddle) with us, you [are] with us in this canoe for good!” I remember that moment for two reasons—least notably because I had no idea what hoe meant, and had to go home and look it up in the Hawaiian dictionary. His statement stood out as an unhesitant expression of the aloha, openness and willingness to love that I’d been feeling ever since I became involved in the community of Hawaiian parents and educators. Immediately I recognized what he was saying: if you are willing to contribute to what we are doing, and want go where we’re going, we’ll love you as one of our own. As a somewhat misfit multiracial person who very rarely encountered a true offer of belonging, I responded to that invitation of hānai (to foster, to sustain) and jumped onto the canoe most willingly.

Cruising with the Kānaka Maoli, I learned that two things were required of me; my first task was to learn my genealogy and start the journey of coming to know who I was through my network of relations. The second task was that I make the
commitment to practice and support *nā mea Hawai‘i* (things Hawaiian), including the values, the traditions, the language and the ‘āina (land) itself. Once I had embarked on the path, there was no turning back; as an indigenous ally, I had to strive to be coherent on every level of my being with the Hawaiian way of being aloha, being pono. Hawaiians have high standards; there can be no “vacation” from one’s commitment to Hawaiian values. The expectation is that every day, one gives 100% to be *pono* (in integrity), to live aloha, to *mālama kou kuleana* (take care of one’s responsibilities for the benefit of the whole), and to *mahalo* (be grateful) for whatever happens—in every role and every realm of life.

I couldn’t avoid reflecting upon what it meant for me, in this context, to have ancestors from the North American continent on which I was born, as well as from the European continent and the African continent. What did it mean that my ancestors had committed atrocities against one another, and against the land, for generations? What did it mean that I was a person with Native American ancestors (Chahta), who was working in a native Hawaiian community dedicated to furthering indigenous education, yet I didn’t feel it was right to seek an indigenous identity because I wasn’t raised among indigenous people and traditions?

These questions of standpoint and identity might not be of significance for the methods section of a conventional dissertation, however they are relevant here because accounting for oneself in the process of decolonization and the awareness of one’s own standpoint is an essential initial phase that reframes typical ethnographic methods into indigenous research methodology. For me to become a part of the community, (the true beginning of this research work) I had first to come to know myself. Until
this point in my life, the facts of my genetic mix meant that two predictable interactions followed me wherever I went. First, I could be sure that, no matter who I was with, I would never enjoy the ease of fitting in on the basis of my apparent identity, and second, I would be asked to answer questions about my ancestry. (Others looked for ways to define me so that they could feel more comfortable after attaching to me the assumptions suggested by their internalized racial schema). As a tenth-grader, some Native American teenagers had told me that if I wasn’t “raised on a reservation, I “didn’t belong with the Indians.” I looked at least partly Black, but knew very few Black people beyond my family and didn’t have the chance to learn the cultural repertoires of African Americans (other than some AAVE10 speech) early in life. I shared the mannerisms and expressions of my European American mother, grandmother and schoolmates. As a child I drew pictures of myself with blonde hair and blue eyes, but it was far clearer to the world than it was to me (at age seven) that I would never be even tangentially close to White.

Due to my position on the borderlands of any social group I might hope to affiliate with on the basis of my genetics, I realized that the most viable option was to construct my identity on the basis of my humanity across contexts and interactions. I could never conflate my identity with my heritage; I did not have the “privilege” of forgetting the color of my skin or the register of my voice in any setting because the world consistently reminded me that I transgressed its categories. Though my child self was regularly wounded by these facts, I now consider this unique positioning a gift that compelled me along a quest to abstain from identification with the external (though my longing was deep) and seek experiences of authentic humanness and

10 African American Vernacular English, AAVE, is a dialect of American English.
belonging that were based on other aspects of community and context.

The gifts that I received from the Hawaiian community deepened my sense of humanness even further by giving me the ritual language of Hawaiian cultural protocols\(^{11}\) to communicate with all my relations in the world. For the first time, I knew how to recite my genealogy, to ask permission to enter, to address the land directly; I could express myself through songs of solidarity, songs of blessing and songs of gratitude. The Hawaiian worldview showed me a new pattern of how life could be organized—around the moon, the stars and the ceremonies that mark their passages as well as our own. Hawaiian protocols and values gave me an embodied way to participate in life, from a foundation of *aloha* (love and care for all of life).

Ultimately, the set of principles I was given for listening, witnessing and cultivating my network of relationships in a culturally-appropriate way made me a better human being. For these many gifts I have been given to carry, I am grateful.

The biases that I now carry with me as a researcher must also be acknowledged, and the ones I can claim awareness of are these:

1. The “mother tongue” of my intellect is the language of science and the empirical, yet this does not stop me from recognizing the Hawaiian worldview as sophisticated, complex and evidence-based. I see internal systems for validity, reliability and survival in this indigenous knowledge system as well as in many other indigenous traditions that describe the phenomena of our world.

2. Following indigenous guidance, I opened up to the world of the senses that includes the feelings of the *naʻau* (gut). I allow myself to be directly inspired by the spiritual world through the land. I find that there is a time and place for this sort of listening.

---

\(^{11}\) Hawaiian cultural protocols may include practices such as chant, song, dance or prayer selected for use at contextually-appropriate times.
deeply, just as there is a time and place for logic and hypothesis-testing.

3. The protocol for participation in Hawaiian community required me to put aloha (caring) first—whenever my role as a researcher and my role as a community member came into conflict during the course of this study, my consistent bias was to choose what was best for the community, (though of course I would first look for a way to inhabit both roles with integrity).

4. Everything changes; knowledge and ideas found herein are not fixed or permanently true, they are a durable representation of a set of conditions that have already changed with time

In my view, this recounting of biases shows that I have internalized the value of holding more than one worldview within (also an aim of many of the HIMENI teachers and their students). Certainly the value of a rich “polyculture” can be understood in the example of a forest where areas with high-biodiversity ecosystems are more resilient to disease and drought than monocultured forest stands that contain only one type of tree. The dominant culture in Hawai‘i is aligned with positivist empiricism in that it assumes a monoculture of objective truth (e.g. rocks are not alive; there is no circumstance under which they could be, even though crystalline forms are known to grow and change dramatically over the span of geological time).

Observing phenomena from more than one perspective can lead to situations in which there appears to be more than one subjective truth about the world that exists simultaneously. One may cultivate the ability to sit with both truths, accepting the first and the second, rather than insisting it must be either one “or” the other.12 Similar to the way that a child who first learns two languages can go on to learn seven, I have

12 HIMENI teachers who were part of one of the three groups in this study developed their own shorthand for referring to this notion of simultaneous truths; they frequently spoke of the contrast between “both/and” mindsets and “either/or” mindsets.
come to believe that participation in multiple worldviews (“multilogicality” as discussed by Kincheloe & Steinberg, 2008), and the ability to hold contrasting ideas side by side without being crushed by conflict is essential to the ethical conduct of research in indigenous community.

Whether noted from a feminist perspective (Harding, 1998; Hill Collins, 2000) or a quantum physics perspective (Greene, 2004), the context and standpoint from which one looks affects profoundly what one sees. Given the historical context of colonization by monocultural worldviews, true intellectual freedom comes through one’s development of the faculty of discernment to encompass multiplicity, be it through multivocality, multilogicality or multiple epistemologies.

**From community member to researcher**

Beginning as a prospective researcher with the four biases above, and delving into the tense history of the indigenous relationship with colonizing narratives of research and religion (Battiste, 2008a; Grande, 2004; Tuck & Yang, 2012; Tuhiwai Smith, 1999; Wilson, 2008), it became clear that, along with knowing my own identity more deeply, I would also have to engage in an active and ongoing process of decolonization if I were to avoid unconsciously replicating structures of domination in my research.

Acknowledging that I carried within myself the rhizomes of colonial thinking was not entirely new to me, since I had studied and argued against the effects of intellectual imperialism in my own personal attempt to account for my “minoritized” position as a woman, a person of color, and a borderlands member of several other communities. This was the first time, however, that I had faced myself occupying the
power position of “researcher in an indigenous community” who, without her awareness, managed to evoke the very legacies of anthropology she had previously sought to critique (Peacock, 2001). Tuhiwai Smith describes the difficulty one may face in standing at this point, and also signifies its importance:

The reach of imperialism into ‘our heads’ challenges those who belong to colonized communities to understand how this occurred, partly because we perceive a need to decolonize our minds, to recover ourselves, to claim a space in which to develop a sense of authentic humanity (1999, p. 23).

Creating learning ecologies in which we can all nurture such a sense of “authentic humanity” from our embodied standpoints is perhaps the “hidden agenda” of my research that had been hidden so deeply inside myself that even I was not aware of it. Coming to terms with my own biases and motivations through the research process has indeed been transformative. It is my hope that my decision as a researcher to generalize from the practices of HIMENI teachers and suggest a generative praxis for diverse contexts will not be seen as culturally extractive, or seen as an attempt to create false rigor through generalization. My aim is to share the wisdom found in the HIMENI teachers’ practices in a way that can be appropriately adapted to help teachers benefit the many diverse learners within US schools who are negotiating life in a rapidly complexifying world.

13 The findings of this study can be evaluated against two very different definitions of rigor, one offered by D. L. Schwartz (personal communication, 2013) and the other by M.A. Meyer in personal communication as well as her 2003 article and 1998 dissertation. Schwartz calls rigor the “the relationship between the data you gathered, the methods you used and the claims that you make on the basis of that data [the conclusions].” Meyer considers rigorous conclusions to be those drawn from the result of a triangulation of evidence gathered through the means of the body/physical world, evidence gathered through the work of the mind, and evidence gathered through the faculties of the spirit. (Brayboy, 2005 also discusses rigor from an indigenous perspective).
Calling for greater attention by researchers to the outcomes of research,

Tuhiwai Smith points out that:

Research in itself is a powerful intervention…which has traditionally
benefitted the researcher, and the knowledge base of the dominant

While this dissertation will become a part of the knowledge base of the dominant
group in society because of the nature of graduate research and its protocols, I have
made a number of intentional decisions that are designed to “keep the whole intact.”

Through ethnographic description in Chapter 3, I present the development of the
findings as they emerged from the situated matrix of indigenous culture in HIMENI
schools; I draw clear boundaries in later chapters about what is culturally proprietary
(“read-only”), and not free for the audience to adapt. The participants trusted me
enough to share their ‘ike (knowledge) and, with aloha, I have done my best to share
the ‘ike in a way that will be visible and beneficial without being exploitative.

I make an effort in my analysis and in the conceptual framework diagram of
generative praxis (Chapter 5, “Locating Generative Praxis”) to be explicit that what
was made visible by the indigenous teachers was given freely, but not everything is
intended to be available for the general audience’s personal use. I clarify with words
and diagrams that the HIMENI teachers’ conceptual framework and cultural values are
not generalizable or applicable in any other context. There is a clear line delineating
what is kapu, set aside and protected, versus what is noa, free for interpretation and
application by any reader. The indigenous knowledge system and the cultural values
from which the model for generative praxis (and its characteristics) are derived belong
to the ancestors of the Hawaiian people and should not be referred to, borrowed or
creatively ‘interpreted’ outside of the contexts in Hawai‘i. Generative praxis itself is a feature of many educational models (see Chapter 5’s section “Defining Generative Praxis). By looking at its instantiation in Hawaiian contexts, we can see it and its impacts more clearly.

**Methods and study development**

Of the indigenous research methodologies that have been identified as appropriate for non-indigenous researchers to use in a culturally-sensitive manner, there are two approaches that best describe the ways I conducted my research. Graham Hinangaroa Smith and Linda Tuhiwai Smith both write about the Whangai approach as a way that non-indigenous researchers can correctly carry out research in a Maori context. Whangai (pronounced ‘fah-nye’ or ‘wha-nye’), means that “the researchers are incorporated into the daily life of the Maori people, and sustain a life-long relationship which extends far beyond the realms of research” (Tuhiwai Smith, 1999, p. 177).

Whangai, meaning “adoption” in the Maori language, shares its etymology with the Hawaiian word *hānai*, which can connote an adoption in which a child is taken in by a new family and raised as one of their own. I participated in a *hānai* approach to research (analogous to Smith’s Whangai model) at every stage from my initial arrival as an outsider, to a helper, to teacher at an indigenous school and later as a graduate student researcher who returned home several times a year to *kōkua* (assist). The familial relationships that I have built with Hawaiian people will extend far beyond the duration of this research project and it is those relationships that truly contextualize my approach to the research itself. I have been clear every step of the
way that my starting point with this research is to ho‘oulu, to grow and support Kanaka Maoli language, practices and worldviews.

Graham Smith’s “Empowering Outcomes Model” for research takes questions that are suggested by indigenous community members as the starting point; the answers to those questions must come in the form of outcomes that have actual beneficial impacts upon the community itself.

My research inquiry followed this model by beginning with the questions that HIMENI teachers posed to me; questions which many of us were sensing as we identified discrepancies between school goals and pedagogical practices. In terms of beneficial outcomes, I hope that this research and any publications that may emerge from it in the future will provide evidence in support of the coherence and soundness of the HIMENI approach, thus assisting community members in providing a research-based foundation as they apply for grants and do the work of evaluating and improving their own programs internally. Due to this research, I was present for most of the Kulanui Aʻo teacher professional development sessions across three cycles of the two-year program. Due to this sustained involvement, I made many contributions of varying significance to the program’s viability and structure over time; I received personal and professional feedback suggesting that those contributions were beneficial to teachers and other members of the HIMENI community.

This investigation was not one of those research projects that set out to operationalize and measure a set of theoretical constructs for the purpose of generalization or to determine the significance of an effect. Initially, the research that I proposed was a phenomenological study (Merleau-Ponty, 1962; Moustakas, 1994),
comparing the conceptions of Hawaiian education among HIMENI teachers at the beginning, middle and end of their professional preparation program, as a means of understanding the changes in their conceptions individually, and as a group over time.

As I watched and listened to the teachers during those early years, I became aware that many of them exhibited mindsets and behaviors that were characteristic of “adaptive expertise,” a hot topic in the learning sciences that seemed worthy of further study. I created a design experiment that taught the subject of “lesson design” differently to two subgroups of Kulanui Aʻo participants. After one cycle of the study it became apparent that those who had received the treatment condition were clearly coming up with more sophisticated lesson designs (based on their own collectively-designed self-assessment lesson design rubric, plus a few criteria I’d added for adaptive expertise and features of design thinking). The ethical choice, for the benefit of the teachers as well as their students, was to incorporate the treatment condition as part of the curriculum; I worked with Kulanui Aʻo faculty to make that change. Over time, my role in Kulanui Aʻo grew and I found myself often filling in as a co-instructor.

Working side-by-side with the indigenous faculty members, I could now create and administer assessments for the purpose of pre-post comparison in a number of areas; I designed several tools to look at adaptive expertise and collected teacher responses on pre-assessments. Months later, when the time came for post-assessment, I could see that asking these teachers to complete a second round of the assessments was going to take time away from activities that were simply more critical for their development at that juncture. Acting with the needs of HIMENI teachers and their students in mind, I elected not to administer the post-assessments for comparison data, delegating that
time instead to the teaching of concepts that were critical for professional success.

Looking back, I can see that the phenomenological study was a good place to begin, giving me a clear picture of what the HIMENI teachers set out to do—in their own words; I’d invited them to reflect on, challenge and extend those conceptions over the course of the program duration. Adaptive expertise and design thinking were clearly strong elements of the teachers’ practices, but it was not until I stopped trying to use academic constructs to describe indigenous phenomena that the research written about here actually began. The parallels to learning science are still present, but they are in the background, and the teachers’ perspectives are now the foregrounded focus. Just as a photographer shifts the camera’s depth of field, I had to shift my perspective to become coherent with the system of values that were present in the context. Once I began working in terms that held their own ecological validity within the HIMENI movement and the Hawaiian worldview, many themes began to emerge.

In the summer of Study Year 1 and Study Year 2, I collected the initial pilot study data\(^\text{14}\) that became a part of this dissertation research; participants were from the first of three groups of teachers who took part in the Kulanui A‘o teacher education program. Data collection ended in March of Study Year 7 with interviews conducted at the closing of the third cycle of the program.

**Data sources**

During the span of the study, fifty-two HIMENI teachers signed consent forms and became research participants in the study. Eleven other participants that were a part of the HIMENI teachers’ contexts as community members, colleagues and elders

---

\(^{14}\) Some of the results from that phenomenological pilot study were shared with participants; findings are summarized in Chapter 3, Second Session, ‘Āhalanui.
were also consented to ensure that they were aware of and in agreement with ongoing
data collection in the learning settings. HIMENI teachers were observed on multiple
occasions in fourteen different contexts for teaching across three islands. These
included educational programs within public schools, independent schools, charter
schools, and schools for adjudicated youth, as well as non-school contexts like
summer programs, resource management education, and family learning programs. All
HIMENI teachers were employed and observed at schools at the beginning of their
research participation; teaching positions naturally shifted over the two year span, and
some HIMENI teachers moved on to different schools or settings for teaching. Types
of data gathered over the course of the entire study included the following:

- Interviews with HIMENI teachers in Kulanui A‘o (conducted by
  researcher plus two other interviewers external to the project)
- Interviews with HIMENI teachers not in Kulanui A‘o who had attended
  conventional teacher preparation programs
- Observation notes on HIMENI teachers teaching in their own school
  contexts
- Post-observation interviews (following one or two teaching blocks)
- Video of face-to-face discussion in small groups
- Video of large-group teacher discussion and/or performances
- Hōʻike presentations by teachers showing and sharing their experiences
  with applying new concepts in their teaching contexts
- Email and discussion board communications
- Conference call recordings of subgroups of teacher meetings
- Artifacts of teacher work as well as their students’ work
- Extensive written reflection and documentation by teachers about their
  professional practice
- Written reflections in the form of “Makaʻala Moment Reflection Logs”
  shared with peers (a few were retold as “makaʻala moments” in story)

Data for the study was gathered and analyzed during all seven years of the study.
Each prior cycle of data and analysis informed the coming cycle of data gathering in a
recursive fashion, though there were major periods of coding and new iterations that
led me to reframe the research questions and guiding theoretical constructs.
Evolving the findings of the study

The initial pilot study conducted in Study Year 1 and Study Year 2 generated three key findings about HIMENI teachers:

- They learned from the context about what their students and community needed
- They sought direct experiences to learn about teaching in new ways; this experience was what helped them transform patterns in teaching
- Unless certain cultural elements were present (hands on learning, storytelling), they found it difficult to absorb and reinterpret the things they wanted to take back and put into practice

Between Study Year 4 and Study Year 5, a second group of teachers joined the program. I created a coding system for use in looking at their statements and artifacts that were targeted to track moments that might yield examples of the following:

- learning from contexts in practice
- group learning as distinct from or going beyond individual learning (analysis at different grain sizes with pre/post comparison)
- adaptive expertise as a key to learning from context
- teachers looking at “assessment use” as key to learning from context
- parallels with design thinking were noted by the researcher

During the course of Study Year 5 and Study Year 6, a third group of HIMENI teachers became part of Kulanui Aʻo. The following key events took place:

- The ongoing practice of “learning from context” persisted as a key framing construct
- Parallels with the constructs of adaptive expertise and the process of design thinking were introduced to teachers in culturally appropriate ways: member checking confirmed the parallels, and suggested that these ideas could have benefit
- Teachers articulated explicit parallels between the design process and the ways that they learned from their teaching context

Taking a step back from the data that I had been attempting to gather and the patterns that currently appeared to be significant, I decided to revamp my coding
system. Rather than continuing to seek to explain teacher practice in terms of theoretical constructs from the academic field, I would let go and begin to look at what the teachers’ practice itself was pointing to as important. Since the start of Study Year 4, I had been aware that my work was becoming an ethnography; I looked back at the raw data and teaching artifacts, revising my coding system around concepts introduced by the HIMENI teachers themselves. Recoding the data, I could see clear patterns of themes emerging. From those thirteen themes, eight met the following criteria:

1. Present in all teachers’ practice (albeit at varying levels)
2. In active use at all schools and age levels
3. Recognized and confirmed by HIMENI teachers in Kulanui Aʻo and outside it

In the spirit of triangulation, I decided it was necessary that, for a theme to qualify, it had to be visible in teacher practice, teachers had to confirm its value in discussion and interview or employ it in their shared vocabulary, and thirdly, the theme had to “make sense” in relationship to a *Kanaka Maoli* worldview. If it didn’t make sense in relationship to the Hawaiian indigenous knowledge system, then its pervasive presence might be an artifact of conventional schooling.

*lawena* (character-relationships and relationships to knowledge) was the only one of the eight themes that challenged this triangulation. Although it was clearly evident in teacher practice, and it was resonant with the Hawaiian worldview as seen in the practices of cultural *kumu* (teachers) of many types, there was no obvious word by which teachers consistently labeled or and discussed the term (excepting one occasion in one group where the term was mentioned directly). They spoke repeatedly of the relationships to knowledge that were encompassed in *lawena* as I’ve depicted it here as a theme, but there was no word or key phrase associated with the pattern; in
virtually every case, context-related words were used to describe occurrences of what

I’ve elected to label lawena. The eight themes were as follows:

1. Pono
2. Hana
3. Lawena
4. Laulima
5. Naʻau
6. Nalu
7. Makawalu
8. Makaʻala

**Analysis and Coding**

Prior to the analysis phase, I developed labeling conventions for all the
different types of data, and was guided by the recommendation of Emerson, Fretz &
Shaw (1995) to write reflective memos about my fieldnotes in an ongoing fashion.

In refining my coding categories, I followed after Spradley’s methods for
domain analysis and taxonomic analysis (1979) and later referred to Saldaña (2009)
when I eventually put the data into HyperResearch coding software.

There were three iterations of the coding scheme that I used for analysis in this
study. The first set of codes was based on the phenomenological categories of
Hawaiian education identified in the pilot study, along with constructs from relevant
literature on culturally based education such as “instance of linguistic dexterity,”
“tension around bilingualism” and “interaction pointed out as ‘being Hawaiian.’” The
second round of the coding scheme added many constructs from sociocultural theory
and teacher professional development. The third round of coding was done after
adding additional constructs from the learning sciences, plus the eight themes that had
emerged across HIMENI teachers’ practices. All in all, there were ninety-one codes in
five major areas that became a part of the final coding scheme.

By that third and final round of coding in Study Year 7, I already had so many significant examples in written form that I chose to recode only a random sample of the video data to see if the eight emergent themes were evident in teacher talk just as they had been in action and written reflection.

The eight themes were all coherent with Hawaiian cultural values, present in observational data as well as teacher reflection and discussion; examples were plentiful and it seemed clear that the findings of the study had finally been identified. Eight values or principles of action were being drawn upon in order to guide the HIMENI teachers as they created contexts for learning designed to cultivate their students’ knowledge in a manner that could help them grow in the ways that Hawaiian community members expected and anticipated from cultural school programs.

Geertz describes analysis as a process of “sorting out the structures of signification,” (1973, p. 9). Inspired by this, I set about the process of finding representative vignettes that could illustrate the eight principles. These seemed preferable to case studies because I hadn’t focused specifically on particular teachers, and while I had enough data to portray certain teachers in that fashion, it didn’t seem to allow all the aspects of the eight themes to be represented equally. Had I chosen one teacher over another, that chosen person’s habitual practices might have been overrepresented in the data, and those of another person underrepresented. My choice to use vignettes and to present slices of life in Chapter 3 made it possible to reveal the widest range of “snapshots” from teaching contexts, as well as the types of dilemmas that arose for the HIMENI teachers. I didn’t select vignettes that stood out because
they were “extreme” or “atypical” cases as Stake (1995) suggests, although teachers did mark the critical events they noticed within their own practice by writing reflections known as *Maka’ala Moment* Reflection Logs. Many of the quotes and vignettes included in the analysis chapters came from incidents mentioned in these logs because they were incidents that the teachers themselves perceived as significant and worth further attention.

Once I began the process of analysis, I started to realize that the themes I had identified were extremely visible everywhere I looked. Some days I wondered “How could I have not seen this before?” and on other days I found myself simply awed by the profoundness of the interconnections. Soon after identifying the themes, I became aware of a certain degree of metacognitive opaqueness I was carrying with me about how I’d identified these themes—they were so obvious by that time, I saw them at every turn in the teachers’ contexts, interactions and statements.

I gained some reassurance from Emerson, Fretz & Shaw, who tell their readers that “due to grounding in literature and good ethnographic process, what seems like a vague sort of sense that there’s ‘something going on in the notes,’” can actually be a very good thing, an indicator “in evidence of the fact that the ethnographer has been creating and discovering meaning of and in the notes all along,” (1995, p. 159).

Still, it frustrated me that even after all the cycles of effort put into coding and analysis, I couldn’t precisely explain how I’d generated my themes. It wasn’t a matter of setting particular criteria, and checking off which concepts emerged with the greatest frequency: were that so, *kuleana* and *mālama ʻāina* would be on the list, along with *aloha*. Those concepts had appeared on other lists of the teachers’ essential
values but just these eight were the ones they drew upon specifically to inform their pedagogy.

I had identified them, I knew why they were distinctive, and I knew that they mattered. The fact that I couldn’t “own” them from an empirical standpoint as Piantanida & Garman (1999) insist a researcher ought to, was nevertheless acceptable to me. The process that I had used was a co-creation based on extensive data, in conversation with my research participants, and led by naʻau (intuition, gut). Although some part of me desperately wanted a quantitative rate, a percentage, or a frequency to “show” that it was these eight and no other, I knew that the standards of rigor for this context were not quantitative in nature. As a researcher in an indigenous context, using an indigenous methodology, I accepted that it was okay for me to let go of the empirical bias, and allowed myself to trust that the methods used had brought me to a valid result: striking patterns in data, confirmed by community members.

I realized that these eight themes had now become a part of my lens as the researcher, just as much as they were a part of the HIMENI teacher’s approach. At some point a friend and fellow researcher explained his writing problem to me by saying that he couldn’t tell which parts of his paper ought to be the framework and which ought to be the findings. The question stayed with me, and everything became clear in the days that followed: the eight themes were not in fact the findings of the study—they were its frame! What I had encountered in my rounds of coding were eight elements of a conceptual framework, built from Hawaiian values, that the HIMENI teachers were using to inspire and guide their changes in practice as they created new forms of teaching and learning in their school contexts.
I continued to look interrogate my data, recognizing now that, while I had a conceptual framework made up of constructs from sociocultural theory, the HIMENI teachers had their own conceptual framework made up of concepts in a Hawaiian cultural worldview. The voices of the ancestors were actively guiding them through these values that they’d internalized and repeatedly drew upon to inform practice.

I saw now that I was still at the beginning, not having “sorted out” anything but the participants’ vantage point. My analysis was far from finished. I continued to look at the data to try and understand where the hōʻailona (signs) would lead.

Wilson writes about this state of openness as indicative of the presence of an authentic indigenous research method. He tells the story of how, when it was time to make assertions within his own study from an indigenous research paradigm, he found himself in a place of uncertainty that he explained as:

…due to the fact that much of this knowledge came to me in an intuitive fashion. In talking about these ideas with the others who were helping me to form them, I often found that just mentioning a word or phrase would trigger the release of a whole load of information and ideas—within both me and the people I was talking with. All of us were research participants, rather than me being the researcher and them my subjects. We all learned and grew as a result of exploring our relationship with this topic. (Wilson, 2008, p. 69)

Similarly, it was by developing relationships with the HIMENI community that I first began to wonder about how teachers could go about changing their practices so fundamentally; it was by watching and listening to teachers (often repeatedly, as I coded their productions) that I came to share their conceptual framework of values, seeing it in every part of their practices. The findings of this study (as described in Chapter 5 and seen as emergent from the teachers’ conceptual
framework) were drawn from a source that I cannot explain quantitatively, but that nevertheless represents an interpretation of the signs and “structures of signification” that Geertz would consider sound, and that Tuhiwai Smith would (regardless of potential broader impact) likely find purposeful enough to qualify as a beneficial outcome for indigenous teachers and learners.

Chapters 3, 4 and 5 all contain interpretations of activity that attempt to explain the same body of teacher action in different ways. In Chapter 3, a method of portraiture is used, following after Lawrence-Lightfoot & Davis (1997), to give a sense of the teachers’ contexts and interactions with one another. In Chapter 4, the eight themes are each described with respect to three defining aspects and vignettes which are presented to exemplify each pattern. In Chapter 5, the pedagogical choices enacted by the teachers are grouped and described as a whole, suggesting a model for other teachers who wish to ‘learn from their own practice’ in the ways that the HIMENI teachers have done with the guidance of these themes.

If we take the definition of culture that Swidler (1986) offers, in which culture is that which “provides a repertoire of capacities from which varying strategies of action may be constructed” (p. 284), then the eight themes of the study can be seen as a specific subset of strategies of action that HIMENI teachers collectively choose to draw upon. Their themes, or strategies of action, come directly from the root of culture, cultural values and the indigenous knowledge system of ancestral Hawaiian traditions. Taken as a whole, the model they suggest has amply been shown to be effective for HIMENI teachers and students (Kana‘iaupuni, Ledward & Jensen, 2010).

As a researcher, however, I faced a challenge in determining how to appropriately
represent this finding because it was rooted in indigenous knowledge. The initial intent of this study was to contribute specifically to the HIMENI teachers, furthering their knowledge through the contribution of research and theoretical framing. Generalizing was never my aim, and in the context of an indigenous community, making generalizations is clearly a step fraught with risk and potential harm.

Quoting Memmi (1965), Marie Battiste (2008a, p. 504) points out that one strategy used by researchers for maintaining colonial dominance over native community has been the very act of “trying to make these values absolutes by generalizing from them and claiming that they are final” (Memmi, 1965). While it is true that my research has led me to a point of generalization, I feel it essential to clarify that the generalizations I am making are not fixed in nature: they are specifically about the importance of dynamic adaptation to context in teacher practice and teacher education. I point this out to illustrate that I am not arguing for absolutes, reifying or reducing any aspect of indigenous knowledge itself.

Indigenous knowledge is not only un-generalizable because it changes constantly in response to changing conditions; it can only be appropriately understood and interpreted in the context of living, embodied relationships with community, language, and land.

Readers of this study must be aware that, while the findings of this study do have relevance for teachers and teacher educators in indigenous communities and beyond, the HIMENI teachers’ conceptual framework is described here because it is pono (correct and proper) to give credit to the lineage of an idea just as it is pono to honor to one’s ancestors in the recitation of a moʻokūʻauhau (genealogical line of
descent) at the appropriate time and place. A model for changing teacher practices across diverse contexts is also proposed on the basis of the HIMENI teachers’ conceptual framework, professional practices and recurring pedagogical elements—this model is effective for the HIMENI teachers, and it also provides an instantiation of many key concepts about distributed learning and change across an entire learning ecology. *Kanaka Maoli* values are related here only for the purpose of contextualizing the research; they are made visible, but not for the purpose of borrowing, blending or incorporating into other settings.

**Protecting community anonymity**

As much as I have tried to minimize the power dynamic between myself and the research participants, it is in the creation of this text that the greatest risk of distortion lies; I have the responsibility of framing the study so that readers will not misunderstand or misuse its revelations. Tuhiwai Smith puts it frankly:

> Researchers are in receipt of privileged information…They have the power to distort, to make invisible, to overlook, to exaggerate and to draw conclusions, based not on factual data, but on assumptions, hidden value judgements, and often downright misunderstandings. They have the potential to extend knowledge or to perpetuate ignorance (Tuhiwai Smith, 1999, p. 176).

Coming from a place of *aloha* (love or intention to benefit all), my goal is to extend knowledge—both for HIMENI movement members and for the many students who may benefit if their teachers shift their approach from the didactic, banking model (Freire, 2000), to a dynamic, generative model that is contextualized.

During this research study, a tremendous amount of privileged information was shared with me and through ongoing member checking I have done my own process of due diligence to assure that I do not expose ideas in this text that either should not
be shared, or are too far away from the target meanings intended.

To minimize the exposure of community members, I made the decision to create composite characters rather than simply using pseudonyms. Although my Institutional Review Board Human Subjects Protocol already approved this work with a “sensitive” indigenous community, and my study participants signed consent forms agreeing to educational use of their words and images, my ethical sense told me that steps beyond anonymity were required to assure confidentiality in this situation.

The HIMENI teachers are part of a small community that stretches across the islands. If I were to make a mistake as a researcher in misrepresenting one of their statements and a reader spotted it, it could have grave impacts on that HIMENI teacher’s personal or professional network. If I described a research participant as a “gifted hula dancer with twin daughters from Kaua‘i who often joined the courses,” there is a high likelihood that some HIMENI teachers, students and/or parents across the islands reading this story would know exactly who she is and begin to put together the picture she had painted of the school, her students, and by deduction, the administrator she happened to complain about one day, as well as the name of the elder who visited her classroom and fell asleep instead of teaching. I might have followed the research protocol for anonymity by not including her name, but I would have violated her trust and privacy by compromising her confidentiality and exposing her choices and statements to public critique in a very small community.

My response to this risk was to develop composite characters for the purpose of creating a more robust anonymity in the study. Creating composite characters required working through a laborious algorithm to make sure every detail would fit
and not offend any criterion of cultural appropriateness. Not every detail could be
disguised, but I feel that it was an appropriate choice to work toward the highest level
of anonymity in order to minimize risk, out of respect for the HIMENI teachers and
their interconnected ‘ohana. No fewer than three different individuals’ detailed
experiences, stories, writings and voices feed into the profile of each composite
character. Identifying factors such as gender and school were changed, as well as
island/place name and the subject matter of teaching.

Were I to choose pseudonyms randomly for the composite character names, I
might unknowingly refer to actual lineages of families from the particular islands or
schools mentioned in a character’s description. Seeking to avoid this offense, I came
up with another strategy. By definition, all Hawaiians trace their genealogies back to
Hāloa, elder brother of the first Hawaiian, and child of Ho‘ohōkūkalani and Wākea. It
seemed appropriate to select family names from this quintessentially Hawaiian
‘ohana; most of the character pseudonyms are names of Hāloa, varieties of kalo.

Reflections on Methods

How can I know that I haven’t transgressed any boundaries as a researcher or
community member? Member checking, use of indigenous research protocols, self-
reflection, decolonization and data triangulation are all essential steps, but ultimately,
one cannot know for sure. I have done my best to represent the data here with fidelity,
but there are many, many perspectives from which to interpret the same data I have
gathered. My interpretation is only one of the many potential points of view, and I
have no doubt that it contains errors, so I ask in advance for forgiveness should this
work offend anyone, be it by inclusion or omission of ideas.
In his book “Research is Ceremony,” Shawn Wilson describes how research is a kind of ritualization because it uses symbols and routines to do what every ceremony does: draw people together and effect transformation. Wilson offers the following criterion for recognizing that research has been done rightly:

The rituals that we do are ceremonies; they acknowledge relationships, and they bring us closer in those relationships. Research is just such a ritual; it should change you, and develop your relationships with all those involved. (2008, p. 68)

I can certainly attest that my life and my network of relationships has been transformed and enriched by this research. On many occasions the HIMENI teachers who participated in Kulanui Aʻo expressed their experience of transformation during the research period—though I cannot assess quantitatively the role that was played by their professional reflections on the value and strategies of their shared endeavor. Wilson suggests that if we are changed by research, then the ceremony is good; we can know we have done what was right for that moment in time.

The chapter that follows this one presents data from the study in the form of an episodic journey of gatherings in one place after the other, moving through a full cycle of one group’s professional learning process at Kulanui Aʻo. Each subsection is narrated by a different composite character.
Chapter 3: Awakening to the Journey - HIMENI teachers discover and (re)define their work

Introduction

This data chapter is comprised of six episodic narratives and introduces a sampling of HIMENI teachers’ perspectives and contexts, revealing some of their aims, experiences and challenges. It orients the reader so that s/he can locate and begin to imagine some of the settings for the HIMENI teachers’ work and its dynamics. This chapter is the most story-like of the three data chapters (3, 4 and 5) and is intended to bring the reader along with the teacher candidates as they encounter one another and come to a realization of their role in the HIMENI movement and where they are collectively headed.

I have drawn all the voices and episodes that make up this journey from actual data, artifacts, and reflections gathered during three cycles of the two-year teacher education program in which the HIMENI teachers participated. Following after Sara Lawrence-Lightfoot’s method of portraiture (1997), I’ve created a narrative portrait of their experiences during the program, though due to length considerations, it exposes only a tiny slice of the content and experiences they encountered. At each locale, the teachers spent a full week together; the content of the course, the dialogue and the experiences associated with that week are summarized with extreme brevity, much as the teacher candidates made reference to events in their reflective writings during each week.

The quotations selected are representative samples that introduce interwoven themes and realizations that the group distilled from the fruit of many hours of

65
dialogue. As a participant-observer who often had teaching responsibilities, I was present to influence the conversation during the actual course sessions; however, data that made reference to my statements and contributions was specifically excluded from this chapter.\(^{15}\) Likewise, my analytic contributions are not explicit in this chapter, although by virtue of my selection of details within the portrait, some influence is present. The reflections and commentary that make up each composite character’s point of view are rooted in the teacher candidates’ own comments as they appeared in journals, writings and course discussion.

I have blended three or more voices to make up each composite character, as a means of maintaining confidentiality and anonymity in a small community. All the ideas represented within this chapter can be specifically attributed to an individual through spoken or written statements, or to participants in a conversation that took place at a particular locale, involving members of one of the three HIMENI teacher groups. Dissenting perspectives are mentioned, if not quoted or specifically addressed.

Teachers’ journals during the sessions, their course writings, “Maka’ala Moment Reflection Logs” and transcriptions of their weekly conference calls provide the data that informs the themes and analysis. In some cases, the teachers’ use of Hawaiian Creole English (also known as Hawaiian Pidgin) could interfere with understanding by academic audiences who are not part of that language community; therefore certain colloquialisms that might lead to misunderstanding have been modified. For example, “We get um” would be changed to read “I understand now.”

\(^{15}\) For example, if a conversation was cited in this chapter during which I had offered commentary while a participant-observer, that specific portion of the conversation (including the statements of others immediately before and after my comments were offered) was not used as data.
readers who understand Pidgin, the purpose behind the changes is to make their statements more accessible. Writing and speech has been left intact wherever possible.

Fundamentally, this chapter tells an aspect of the HIMENI teachers’ story, drawn from their own perspectives—and as such, many different viewpoints are represented in terms of backgrounds, identities and relationships to the mission and aims of the movement.
First Session: Waipiʻo Valley on Hawaiʻi Island

As told by Kaleionaona, a twenty-seven year-old woman.

_Aloha e_
_Aloha e nā akua_
_Aloha e nā ʻaumākua_
_Aloha e nā aliʻi o Hawaiʻi,_
_Aloha e nā kūpuna,_
_Aloha e nā mākua_
_Aloha e ka lehulehu_
_Aloha e 16_

_Aloha mai kākou. O wau o Kaleionaona Piʻialiʻi, born and raised in Moʻiliʻili on Oʻahu. For the last two years I’ve worked as a roving science teacher at Kamakani School, working with middle and high school age students. I used to be a marine biologist and got connected with Kamakani because their students used to come out and ʻōula (assist) us with invasive species eradication in threatened bays and_

---

16 Greetings to the deities, greetings to the ancestral guardians, greetings to the chiefs of this land, greetings to the ancestors and elders, greetings to the people, greetings to the innumerable ones
fishponds around our island. I found myself looking forward so much to those days when they’d come out, that I tried to get a grant to do more work with them. It didn’t come through, so I just applied as a teacher and now I’m part of the Kamakani team. According to the No Child Left Behind Act,\textsuperscript{17} that is recently being enforced statewide, I have to be enrolled in a state-approved teacher education program to keep working at Kamakani long-term. When my school administrators told me about Mauliola, the teacher licensure program at Kulanui Aʻo (a small university), I jumped at the chance to apply so that I can continue working with kids in schools.

I think one of the reasons I love teaching young learners is that I know how much of a difference it made for me to have my father in my life. He was a botanist and taught me about native plants and forest systems. I want to be there for this next generation, and share with them the big picture of how our health is directly connected to the health of ocean systems—to show them how they can participate in helping our ʻāina (land, ecosystem) to become more balanced. What I didn’t guess before was how much the students would be teaching me, and how this exposure to nā mea Hawaiʻi (Hawaiian things) would change me in all areas of life.

Seven days ago I came here to Waipiʻo Valley for the first time. That Sunday afternoon was the start of the first course in the Mauliola program that our group of twenty inservice teachers will be part of over the next two years. We gathered at Waipiʻo Lookout and were introduced to the place by our three kumu. Aunty Iwi and Uncle Mākoko are the two faculty of Kulanui Aʻo who developed the Mauliola program, and they are teaching together with a kupuna (elder), Aunty Ulumau. The

\textsuperscript{17} The Elementary and Secondary Education Act of 2001 (ESEA) was commonly known as the “No Child Left Behind” Act or “NCLB.”
*kumu* led us through a series of cultural protocols so that we could ask permission in a culturally appropriate way to enter the valley and visit its *wahi pana* (a storied place, regarded as special or sacred). They told us some stories about this *wahi pana*—how it used to be the “gathering place” where people from all the islands would meet, and how many of ruling chiefs chose to reside here because the valley is a place of great *mana* (spiritual power).

As we walked down the cliffside road into the valley, the first thing that struck us was the natural beauty of the ocean. Gradually the road became steeper and steeper—over the guardrail you could see the old rusted-out carcasses of cars that had tumbled over the edge; we counted nine! I clung to the road’s inner edge with Hoapili, my teaching buddy from Kamakani School who also got into the program; he helped me to relax about the heights. We focused on remembering the *oli* (chant) that was introduced to us at the top. We’d practiced it a few times, but by the time we arrived at the area where we were camping on the valley floor, we would need to chant it properly to request entrance to the area from its residents. The chant was completely new for most of us; only eight of the twenty live on Hawai‘i Island— the rest of us had flown over from either Kaua‘i or O‘ahu that morning. At some point, Hoapili and I realized we’d mixed up two lines of the *oli* and needed some help from one of the other cohort members. Up ahead, someone had stopped over on the side and was holding her knee.

“Are you doing okay? Do you need help? Sorry I forgot your name.”

We’d only met an hour ago, so I didn’t feel guilty about not remembering her name.

“I’m Lokahi, and yeah, I’m all right; just needed a minute for rest.”
“Oh good, then you won’t mind if we ask you about the chant,” Hoapili said with a big smile. Lokahi already had it down. She was an ‘Ōlelo Hawai‘i (Hawaiian language) teacher so it was easy for her; unlike us, she actually understood what each line meant, beyond the place names that were used. She set us straight with the lyrics and helped us practice it line by line until we arrived on the valley floor. When it was time to line up outside the gate to chant in, we could be confident in our voices, and the two hosts who responded to our oli and welcomed us in seemed pleased.

After an introduction to the place and a short “talk story”18 with the group, we set up our tents, checked out the bathing facilities, (i.e. the path down to the river), and settled in for a meal that our hosts had prepared for us over camp stoves. The canopy of tarps that shielded the fold-out dinner tables from that night’s rain would also shade us from the sun during our daily workshops that started the next morning at 8 am.

We started the next day as we would start many: with a hoaka (crescent formation), facing the sunrise. Cultural protocols were chanted and we made a circle around the breakfast tables that had been pushed together; there we started the process of getting to know one another. Personal introductions were followed by an invitation to express our expectations and needs from the program. I remember this part because people surprised me with their clarity and enthusiasm about what they needed.

For me, it was simple. I want to be a better teacher. I said that I hope to learn how other teachers do what they do. Knowing how to structure and to assess project-based learning is also important for me. Even when I get the activities right, I still don’t know how to make sense of what it means. How do I know who has got it and

18 “Talk story” is a discursive practice common across the Hawaiian Islands. Kathryn Au’s 1980 study of “talk story” as a culturally appropriate literacy development practice made the term, and the Kamehameha Early Education Program well known in the academic community.
who doesn’t, or what they took from the experience beyond the thing that I meant for
them to learn?

Uluwehi was ready to jump in:

I’m here because I want to be certified to teach the way I wasn’t taught
in school… Freedom is what we are “planting” [with HIMENI]. Ea!
We are planting a seed; introducing a point of view. You give freedom
to yourself, but we need each other’s support in doing that. I know how
Hawaiians teach in a hālau (school of hula dancers) or on the waʻa
(voyaging canoe). But I also need exposure to new teaching styles for
the classroom; I went to a lot of regular [conventional] schools. I want
to see and experience how to help our keiki (children) and ʻōpio (youth)
in ways that go far beyond that.

Kūpono shared her experience:

Teaching on Oʻahu, when I go back to the place I was raised in the
kuahiwi (rural areas or mountains), it is painful seeing how much things
have changed, and where my people are at now. If it wasn’t for
Kamakani School, I wouldn’t have a way to channel that pain; I
wouldn’t understand how important my role is. Education is just the
brink of a whole other cycle of change we got ourselves into.
Education, life success and indigenous independence are correlated,
tied together. I am glad that I have the opportunity to learn [about how
to do what we’re trying to do better]. The state university doesn’t offer
courses where you can really get ʻike (understanding that goes beyond
just having information).

Lokahi, a teacher from the bilingual immersion school in Kona was completely frank,
and I think a lot of us identified with her needs:

I want strategies to develop relationships with kids positively, instead
of by scaring them into submission like my teachers did with us. I want
to be able to motivate them in other ways— to get to aloha (love and
care for) them! Also, I don’t like the idea that I wasn’t trained
properly—I don’t think I’m a good teacher; it feels like I’m cheating
them at times. I want to be equipped with successful ways of
transmitting the stuff I teach—Hawaiian Language for elementary
kids—on a daily basis. I need something I can use this new semester to
be a better teacher. And I need for my kids to see that I’m working to
be better for them and all of Hawaiʻi.
We discussed those ideas for a few minutes because there was a buzz of affirmation in response to Lokahi’s statement. That sense of wanting to be a better teacher in order to build a better nation—that resonated with us all at a deep, deep level. When we moved on, Leimana spoke up offering her commitment:

…to spend the rest of my life using education to better my community. I am here because I need moral support—to be rejuvenated again. I need to hui pū (gather and connect) with other people who are thinking and doing similar things. To coalesce and synergize. I hope we have chances to honestly talk about our situations, our future, our limitations. I’m also excited to make more contacts for our students across schools.

Echoing that, Kūpono spoke up again:

We were talking in the van on the way from the airport about how it’s so good to know you’re not the only lone soldier in the field. Coming here, I’m thinking about school again in a new way. Hopefully the networking here will make it easier to plan. This is like summer camp with the best of what HIMENI has to offer!

Thrilled by this analogy, I burst out with an exclamation: “Networking! Rejuvenation! Excitement! Yes, that’s what we need!” Realizing I had disrupted the focused tone of the group, I further explained:

Coming to Waipi‘o is an awesome way to get that rest we need, even as we internalize new ways of learning and teaching. Just think… we get to be with our kūpuna (ancestors) here in the valley. We hear their voices, and the voices of support from this group of teachers and peers. It’s like, on our own, on some level we’re all still questioning that hegemonic consciousness inside of us. We have self-doubt, the after-effects of colonization. We need one another’s perspectives to look and help us check ourselves, and become better examples for our kids and ʻohana (family).” Admittedly, I think I threw a few people off with the “hegemonic” comment, but most heads were nodding, so I figured it was a good time to stop talking.
La‘akea offered her ideas about fulfilling her kuleana (responsibility):

Times like these with our peers and mentors motivates us to ‘ōlelo (speak Hawaiian), to learn more, so we can share it with our kids. I know I will be able to balance myself out quicker when I hear all this mana ‘o. To have it reinforced with this group, with these values—I feel more confident in having the authority to speak it. I have the kuleana to teach and the purpose to kōkua (help); that means I have to focus and do whatever the kids need for me to give. Part of being a [HIMENI] teacher is knowing that you are sharing whatever it is your responsibility to share. The kids will develop their own kuleana. That is the one part of the task you can help them to “get” no matter who you are. But I gotta understand things better myself, to help the kids to understand it.”

Ka‘ōiwi was quick to agree:

Yes! Speaking up about what we know is right. As a district teacher [in a conventional school] they stop you from teaching our students all that is Hawaiian. My role is going to be as a stepping stone so that our [conventional] school can see firsthand to see what is Hawaiian, and to see that we can become a HIMENI school -- even within the system. I think I’m in this program now so that I’ll be able to speak out and talk to those who are trying to put a stop to project-based learning and the other things it takes for our kids to learn. Reform model or not, principal against me or not, I’m going to do what is right --aloha kekahi i kekahi (show love to one another)-- that is my kuleana (responsibility) and I need your support.

Silence settled in after Ka‘ōiwi’s offering; we spontaneously reflected on the monumental task of changing the statewide system. Moku carried us forward with his comment:

Listening, I had a lot of thoughts. I’m here because I was born with this kuleana and I mahalo Ke Akua (I thank God, the spiritual force) that I’ve been able to understand that, because many don’t. I have four kids, and a lifestyle that allows me to be close to them every day and practice the culture – not just tell them about it! My children understand their kuleana; they have sovereignty in their minds. [In HIMENI schools] we meet and feel each others’ mana. In [conventional] schools, mana is being sucked out [of students and teachers] in the trenches. This wahi
pana of Waipi‘o is the appropriate time and place for this learning; the hōʻailona (signs) are there.

Uluwehi shared her story:

Before coming to ‘Eli‘Eli School, I had worked six years in car rental. My naʻau (gut feeling) spoke up when a kupuna asked me “Why are you working with other people and not serving your own?” My life has been about family, about culture, and I do have a lot to pass on—so that really woke me up. I am hoping that Mauliola will give us the tools we need to help our kids to succeed. In the school district where my aunty worked for 35 years, you gotta follow their rules. I wondered what this program would be like. [I am] so tired of students asking, “Why do we have to learn from non-Hawaiians? Why we gotta learn from a haole (foreign) lady from the mainland?” Our young kids cannot connect [to the world beyond] at this point in their lives. It is a beautiful thing to see so many Hawaiians here stepping up to our kuleana. Personally, I need more tools to help the Lāhui [body of the Hawaiian nation] to excel.

Aunty Ulumau, our kupuna leader, picked up on the positive by affirming that:
I too am impressed to hear all of you young intelligent Hawaiians speak from your *naʻau* (heart, guidance). This effort will help the kids and help the movement. I want to learn as much from you all as I can so I am able to contribute in new ways.

Hoapili had been silent, but as usual, he was listening closely and watching every move in the group. When it seemed like everyone else had spoken, he opened up:

I finally graduated college two years ago, and didn’t know what to do. I was a Hawaiian studies major, and the thing I know most about is *waʻa* (Hawaiian sailing canoe) traditions.

I know that I don’t know how to be a teacher, and was lucky to have a mentor to learn from at Kamakani School. When I found out I am going to teach by myself next semester, I was scared. But coming together with you all here in the valley today means a lot. It feels good to know that I have a support system that stretches beyond Kamakani. I really don’t know what my teaching style and pedagogy is yet.

I think we all feel that way on some level, knowing that we don’t know, not knowing how to learn, but ready to do whatever we can. Kaʻōiwi remarked that:

For me, teaching is a very personal, passionate thing. If the kids aren’t getting it, it’s a personal struggle and a frustration of, ‘How do I communicate this knowledge?’ This is a huge responsibility because the window is open to us right now with the kids. When that window is open and I don’t have the ability or tools, the kids are the ones who lose out. I expect to go back to school with tools.

Uncle Mākoko responded, wrapping up the conversation on an energetic note:
We can’t give you all the tools in one week, but you can use the ones that you do get, and come back for more… We are all here for a unified purpose: helping these valuable things [cultural ways] to blossom again, by pulling the weeds and allowing the kalo (taro) to grow. Those weeds are here in the wake of colonization by Western systems—that is what leaves people depressed, angry, and unhealthy. My job is to “deconstruct” so that I can contribute to re-construction; I am doing that within myself and am here to support you in each of your personal processes. We have a right and an accountability to practice our culture. We have freed up our spirits, and now we need to free up our minds. Skill is to be used and shared. Part of identity is having skills. Part of community is putting those skills into action for a purpose, for nurturing relations and balance. Each of you has been willing to ‘āuamo kuleana (to carry the responsibilities given to you), and you have come here to this place of beginning. We are here, kū a paio, standing, looking at the truth!

Following that powerful first morning discussion, there was much, much more to come. We got to mālama ʻāina (care for the land) with ʻAnakala Ikaika, a kalo (taro) farmer who was born in the valley and has been living and farming there for most of his life. He taught us an oli (chant) to use as part of protocol when entering the taro patch, and we had a glorious afternoon up to our knees in mud, pulling weeds to clear the ʻauwai (channeled streams where water flows to reach the wetland kalo). We didn’t know it at the time, but that would be our only day of sunshine the entire week. The rain poured on day after day to the point
that each morning we were waking up wet, with the tent floor soaking in inches of water. The rivers along the valley floor had not yet flooded so ‘Anakala (Uncle) knew we were safe from harm, but just the same, there was nowhere else to go but under that canopy. Even though sometimes it felt like we were trapped and couldn’t get away from each other, we made the best of that opportunity to bond and get to know each other under inconvenient circumstances.

During our workshop time we had discussions about everything from the administrative structure of our schools to cultural concepts like the kind of kanaka makua (mature, self-motivated) students we hope to cultivate. We noticed that our conversations kept wrapping back around to the importance of teachers in modeling (at every level) the behaviors we want to see in our students and communities. We spent one afternoon gathering hō‘iʻo, lūʻau and kī leaves from around the area and prepared dinner using only the Hawaiian language while we gathered, cooked and ate. This was challenging for some and entertaining for others, since some of those who had been most articulate during discussions found themselves unable to communicate, and a different set of voices stood out when we would ‘ōlelo Hawai’i (speak Hawaiian).
Every evening two or three of us would give a presentation and video of the place where we were teaching. I really enjoyed this because the ten schools and settings are all so different. Some are rural, some are urban; some have Hawaiian-speaking students trying to learn English, and others have English-speaking students trying to learn Hawaiian and Standard English better, though everybody shares Pidgin (Hawaiian Creole English) as a the language of home. We would watch a few video presentations each evening and talk story about each different teaching context-- it really helped us get to know how simultaneously similar and different our situations are.

For me, the most important take away from this week is that we’re all in this together. Every single one of us has recognized our kuleana (responsibility) and we’ve begun to carry it forward – but we don’t yet know how to fulfill it. As teachers and as leaders in our communities, we need support from one another in order able to figure out how to teach in the ways that our community needs and expects. As people who are actively resisting the dominant worldview and “decolonizing” ourselves, we
have to be especially conscious because the ways that we think and the things we do are influencing the kids we teach. As residents of Hawai‘i who know the value of cultural knowledge, indigenous language and this land that gives us life, we are aware that the need for systemic change is urgent. That change must happen inside and out.

Hawai‘i is facing the same kinds of massive scale problems that the rest of the world is, but we can be grateful that we have a foundation of values and principles for building solutions—a time-honored cultural foundation! We need to get the message out to all of our HIMENI families, stakeholders and supporters that going back to this root of cultural knowledge is the way forward. Indigenous self-determination is critical, and school is one of the ways that we can organize ourselves and our communities to bring about the kinds of changes that will help us survive and thrive again as a lāhui (a nation and a people).
Second Session: ‘Āhalanui on Hawai‘i Island
As told by Leimana, a twenty-four year-old woman.

Welina mai~
O wau o Leimana‘ula‘ulaokalewa
Kahalelaau, mamo a Eula Mei Chun a me
Williama Kahalelaau mai a Honomalino.
Moku o Keawe ku‘u one hānau. Kōkua au nā
keiki ma ke kula Wailana Cultural Academy
e noho mai Kona Hema.¹⁹

Two months ago, we went with our Mauliola hui (group) down into the valley of Waipi‘o, where we dug deep within ourselves to understand our purpose as teachers in this new kind of school. We learned from the land, and we learned from one another that each of us needs support in figuring out how to actually do what our students, families, ancestors and communities are asking of us. We came to realize that we all share similar kuleana and can learn from one another’s experiences even though our contexts are incredibly diverse.

During this seminar we built upon that foundation. This week we have again come together on Hawai‘i Island, this time camping out in a rural area of Puna where breezes carry the gentle fragrance of hala or pūhala (Pandanus tectorius), a native tree. The focus for this session was “Hawaiian Ways of Knowing and Learning,” and we have been immersed in the most fundamental Hawaiian practices for learning:

---

¹⁹ Greetings. My name is Leimanaulaulaokalewa Kahalelaau. I am the child of Eula Mei Chun and William Kahalelaau of Honomalino. Hawai‘i Island is where I was born. I teach at Wailana Cultural Academy, and live in Kona Hema (the area south of Kailua-Kona).
Paʻa ka waha – Close the mouth

Nānā ka maka – Look with the eyes

Hoʻolohe ka pepeiao – Listen with the ears

Hana ka lima – Work with the hands

From the first morning that we arrived in Puna and completed our greeting and genealogical protocols, our hosts and instructors engaged us in hands-on learning. Community members young and old came together to welcome us with moʻolelo (stories, myths and legends) of the place, including tales of Pele, Hiʻiaka and Hopoe. They gifted us with story through hula that was new to many of us but very old in traditional lore, having been passed down among the families of Puna. By the evening, everyone was well-fed in mind, body and spirit.

The next morning, we had a workshop session on planning place-based lessons, then were taken to a grove of pūhala trees and taught by a young cultural practitioner how to select and gather the hala leaves. She had learned the tradition of her family, and was passing on her knowledge to us. Returning to the campsite with spiky armloads of lauhala, that evening we huddled under lean-tos and tarps as we were shown the customary methods of preparation. We watched in the light of solar-powered lamps as a few skilled elders and youth wove complex patterns into bracelets of hala. Eventually, we attempted to make our own simple forms—some with more success than others.

The next day we began a huge project of dyeing the kīhei (ceremonial attire) that we would stamp with symbolic patterns and wear at our graduation two years from now. The methods of dyeing we were introduced to by Aunty Kaʻena all relied
upon native plants such as māmaki, ʻōlena, alaheʻe and noni. We were fully engaged in the experience, and also were thrilled because this is something we can share directly with our students even as we ourselves are learning. Several of the Kauaʻi and Oʻahu people extended their flight so that we all can stay one more weekend together, share different methods for dyeing and collaborate on our lesson planning for next quarter.

On the fourth morning Aunty Kuʻulei, a beloved elder and lawaiʻa (fisher), took us for a huakaʻi (trip). We walked first along the roadside, where ʻōhiʻa (Metrosideros polymorpha) trees are bursting with likolehua (buds) and blossoms in a thousand shades from scarlet to vermillion. Deeper in, the ʻōhiʻa forest turned to entangled groves of milo and kamani and we saw an abundance of the invasive waiwī (strawberry guava or Psidium cattleianum). We carried tools for sawing and prying, since our mission that afternoon was to mālama ʻāina and care for the forest. We were grateful to see that, while the aggressive waiwī was present, the healthy and strong indigenous trees like alaheʻe and lama were successfully growing too. We pulled out as much waiwī as we could to make room for the native plants to grow and as we talked, we brainstormed what we might do with all of the wood we had to carry out on the way back. After a sweaty, quick lunch break, we left our tools there in the forest and continued down the path to a wahi pana that few of us had ever been introduced to.

Coming to Kaleʻa was really special because many people know of the surf spot just out on the shore, but Aunty Kuʻulei showed us a much lesser known side of the wahi pana. Just beyond the edge of the rocks, in the shaded protection of trees is
the former site of a sizeable Hawaiian village—the rock walls and structures of the housing complexes can still be seen, and it was easy for me to imagine the kūpuna of that place resting their tired bones in the shade along the shore. The images of daily village life I “studied” in my fourth-grade ahupua‘a unit came to life here, decades later, at Kale‘a. Just like in those textbook illustrations, I could imagine the old men ‘making net,’ and the women pounding kapa or even weaving lauhala with the exact same methods we had done days before. Aunty Ku‘ulei told us to mū ka waha (silence the mouth) and sit in quiet reflection to listen to the ʻāina itself. After a while, she asked us to share what we’d heard. Before we left, she told us a story of Ka Makau Nui o Maui (The Great Hook of Maui, a Polynesian demigod) and how that moʻolelo (legend) told across the Pacific had been interpreted with special meaning in this particular place.

Walking back through the silent forest, we brainstormed all the different ways of Hawaiian knowing and learning that we’d participated in since arriving. We came up with a massive list, which is pretty amazing when you consider how enjoyable the teaching and learning was that we took part in on those days. Honestly I can say that I will simply never be the same person again after this seminar; no one ever goes home from a week at Mauliola as the same person. Having exposure to these experiences and traditions is so transformative for me! I’ve been involved in hula and nā mea Hawai‘i my entire life, but I never really thought before about the formal and informal ways by which learning is passed. This week was filled with makaʻala moments (insights) for me because I was thinking about my own cultural practices from a new perspective.
When we got back to camp, we wrote down the things we’d brainstormed while walking, and Aunty Iwi brought out some really fascinating information to share with us. She’d read through our essays from when we first applied to the program, and made a summary of the different aspects of this new type of Hawaiian education that we had collectively mentioned in our application essays. We looked at her summary alongside our list of Hawaiian ways of learning and knowing, while keeping in mind the question, “What constitutes this HIMENI movement in our schools and communities?” The list of conceptions of HIMENI Education that came through in our application essays read as shown below.

Conception 1:

**HIMENI education respects all relations by showing aloha**

“Everything you had you would share and you couldn’t go anywhere without having to stop and say hello. It didn’t matter if it was a relative or not, they still deserved the same level of respect as your own family.”

“I have had the opportunity to revitalize my identity and learn the history of my people through many relationships with Akua, ‘Aumākua, Kūpuna, Mākua, Hoaloha and Haumāna,” (God/s, family guardians, ancestors, elders, adults/parents, friends and students).

Conception 2:

As mentioned specifically in applicant statements, **HIMENI education employs some or all of the following set of pedagogical strategies:**

- ‘Ōlelo Hawai‘i integrated and used strategically to deepen understandings
- intergenerational and multiage participation
- peer-to-peer support and collaboration
- meaningful questions, relevant to community concerns
- culturally relevant content
• authentic assessment, both ongoing feedback and hōʻiike (demonstrations of knowledge)
• project-based and thematically-organized so students can make sense for themselves
• interdisciplinary, not divided into content areas or time blocks.
• critical thinking, questioning stance toward the dominant narrative
• integration of digital technology so that students are creators of knowledge, not merely consumers of it.
• differentiation based on each child’s abilities and inclinations; instruction is tailored to suit his/her unique needs & trajectory of learning.

Conception 3:

HIMENI education engages students in learning through observation, use of examples, and hands-on practice

“Most of what I learned from my family was by experience, which is what makes Hawaiian education so unique”

“It [Hawaiian education] gives the children the opportunity to not only observe, but to become an active participant in the learning process.”

“Papa was a silent Hawaiian man filled with so much knowledge. We learned a lot through our Papa’s eyes…Papa would take us to He‘eia where we’d observe his eyes with anticipation in hopes of learning something new.”

Conception 4:

HIMENI education enacts shared values that “feel comfortable” to Hawaiians

“I realize now that I tend to choose paths of learning that are more culturally sensitive, because it is where I feel most comfortable and the closest to my family.”

“Education can only be relevant when it speaks to the identity of the student and [can only be] uplifting when it reinforces that identity”
Conception 5:

HIMENI education uses the ‘āina (land) as a primary learning environment; instructional decisions are made in tune with natural conditions

“I truly believe that our haumāna (students) need the ‘āina (land) to gain concepts being shared.”

“She [my elder and mentor] instilled in me that Hawaiians are always in tune with their environment and surroundings.”

“I [want to] help students make meaningful connections with the land and where they are from, motivating them to become lifelong learners.”

Conception 6:

HIMENI education organizes its interdisciplinary curriculum around wahi pana (honored places); cultural protocols and the oral tradition are fully integrated

“I wanted my father to teach me all the wahi pana and the wisdom that he captured throughout his 65 years as a paniolo…the wisdom that held the key to my identity.”

“By passing down such information with proper protocol, reverence for oral history and in an interactive experiential manner, my kumu (Hawaiian teachers and mentors) have all implicitly underscored traditional learning styles…”

“I try to pass on these invaluable lessons, as a holistic perspective, one that values interdependence and a reciprocal relationship with the land.”

Conception 7:

HIMENI education teaches kuleana—everyone has a responsibility to take transformative action for cultural & community revitalization

“We [who teach in HIMENI schools] find ourselves being a pendulum for balancing the wisdoms of our past and the 21st century.”
“I knew that I had to find a way to use the educational opportunities that I had been afforded to give back and help uplift the community that has sustained me.”

“It is imperative in educating Native Hawaiian students that we value and make paramount the voice of their culture, (as it exists on an ongoing continuum) thereby reaffirming both their identities and the relevance of school to their lives and the betterment of their communities.”

We discussed each of these conceptions and agreed that they were indeed reflective of the tradition of Hawaiian education, as we seek to represent and perpetuate it in the HIMENI schools, and in our personal teaching. We could definitely think of other things that should be added at that level of being “fundamental” in Hawaiian learning, such as under Conception 4, we would include Mālama ʻĀina as a core pedagogical strategy, up on a level with “ma ka hana ka ʻike” which also isn’t represented. So we saw that list as being on target but not fully complete.

The list we came up with today after our walk was much longer, and rather than being big concepts, they are more at the strategy level—what do we actually do when we truly teach in a Hawaiian way. We each wrote our own memory of the conversation and then added our own brainstorms, coming back together again to create the finished product. There was a lot of repetition among things that we agreed on, so the final product didn’t have that many more ideas than our individual papers. With all of the ideas grouped together not by size, but showing spatial significance (overlapping and side-by-side), our chart looked like this:
Figure 1. Teachers’ brainstorm of Hawaiian Ways of Knowing and Learning.

Items appearing in Figure 1 are also listed below for easier reading; a brief explanation is given if a term is not common in English, or is not explained elsewhere.

<table>
<thead>
<tr>
<th>Haʻi manaʻo, wehewehe manaʻo—sharing explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scaffolding—introducing information in a stepwise manner that allows for student success</td>
</tr>
<tr>
<td>Pre-selection of a person to receive certain knowledge, usually done by the expert</td>
</tr>
<tr>
<td>Pono - Balance that is right for the moment</td>
</tr>
<tr>
<td>Resourcefulness</td>
</tr>
<tr>
<td>Hoʻoponopono— to set right</td>
</tr>
<tr>
<td>Rites of passage</td>
</tr>
<tr>
<td>Preparation – that is your kuleana as the learner</td>
</tr>
<tr>
<td>Spirituality</td>
</tr>
<tr>
<td>Flexibility</td>
</tr>
<tr>
<td>Recognizing and using opportunities</td>
</tr>
<tr>
<td>Traditional and progressive – as is often said, the “ancient is modern” and it is always growing and changing</td>
</tr>
<tr>
<td>Hoʻomaopopo – understanding, developing new understandings and networks of meaning</td>
</tr>
<tr>
<td><strong>Hoʻomaʻamaʻa</strong> – practice to get more familiar</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>Respect</strong></td>
</tr>
<tr>
<td>Levels of respect and status</td>
</tr>
<tr>
<td><strong>Hoʻopili</strong>—repetition; following after expert</td>
</tr>
<tr>
<td>Mimicking – “fake it till you make it”</td>
</tr>
<tr>
<td><strong>Observation</strong></td>
</tr>
<tr>
<td>Hands on practice</td>
</tr>
<tr>
<td>Asking good questions – when knowledge has been gained from observation and it is time to ask questions, they should reflect understanding</td>
</tr>
<tr>
<td><strong>Paʻa ka waha</strong> – close the mouth and listen</td>
</tr>
<tr>
<td><strong>Demonstration</strong></td>
</tr>
<tr>
<td><strong>Excellence</strong></td>
</tr>
<tr>
<td>Balance between the spiritual and educational arenas</td>
</tr>
<tr>
<td>Grooming an individual for a specific role or task</td>
</tr>
<tr>
<td>Relationship &amp; interdependence – the context and reason for knowledge sharing</td>
</tr>
<tr>
<td>Inspiration by <em>akua, ʻāina</em> – the spiritual world and the land directs us to learn what we need to</td>
</tr>
<tr>
<td><strong>Rationale, Reasoning behind decisions</strong> – whether explicitly spoken or not</td>
</tr>
<tr>
<td><strong>Gender Roles</strong></td>
</tr>
<tr>
<td>No absolutes—everything is on a continuum, interpreted in light of context</td>
</tr>
<tr>
<td>No questions – just observe and learn; know the right time &amp; place for nīnau (questions)</td>
</tr>
<tr>
<td><strong>Alakaʻi</strong> – leadership roles</td>
</tr>
<tr>
<td><strong>Adaptation</strong></td>
</tr>
<tr>
<td>No instructions, no recipe, no video – feedback is responsive to learner progress, tasks aren’t outlined ahead of time</td>
</tr>
<tr>
<td><strong>Noʻonoʻonui</strong> – Large concepts</td>
</tr>
<tr>
<td>Concept-oriented vs. process-oriented – quality learning should begin with experience and make links to the abstract rather than in reverse</td>
</tr>
<tr>
<td><strong>Repetition</strong></td>
</tr>
<tr>
<td><strong>Do it!</strong></td>
</tr>
<tr>
<td><strong>Hoʻopaʻanaʻau</strong> – memorization; making solid in the naʻau</td>
</tr>
<tr>
<td>No talking – show respect by paying attention, for example, to elders who are storytelling</td>
</tr>
<tr>
<td><strong>Listening</strong></td>
</tr>
<tr>
<td><strong>Hoʻolohe ka pepeiao</strong> – listen with the ears</td>
</tr>
<tr>
<td><strong>Hana ka lima</strong> – work with the hands</td>
</tr>
<tr>
<td>Timing – developing one’s own sense of appropriate timing; important, for example, in knowing when to ask questions and when to just try again</td>
</tr>
<tr>
<td><strong>Moʻolelo</strong> – story, myth and legend</td>
</tr>
<tr>
<td>Genealogy – <em>moʻokūʻauhau</em>, the value of genealogical links to the past/present/future</td>
</tr>
<tr>
<td><strong>Ma ka hana ka ʻike</strong> – through work, one learns</td>
</tr>
</tbody>
</table>
We talked about the differences between our meager “before” list compared to this sizeable “after” list, and agreed that, as a group, we had definitely collectively experienced huge insight into Hawaiian educational patterns in these last few days. With our workshop tasks that focused on lesson design, we now had the challenge of incorporating these patterns into our teaching settings and community contexts in an even more explicit way. Not everyone in our hui is exactly maʻa (familiar or practiced) with Hawaiian things though, and one person in particular expressed his resistance to it. For Mark, a lot of this was new to him and there were some parts he could get behind, and other parts that he needed more insight on from other perspectives.

He said that, though he agreed education in Hawaiʻi is in need of great improvements, it was hard for him to identify with “the emotions that everyone has been feeling regarding this ‘movement’ that Hawaiians want to see happen with education.” Mark said there was no doubt that he had learned a great deal from the experiences both in Waipiʻo and here in Puna. He was grateful, and could see that there was value in this kind of Hawaiian learning, but he wasn’t sure why it had to replace regular schooling; he wanted to know “Why it can’t just go alongside?”

Mark explained his point of view:

I think I understand what everyone is saying and respect that, but I’m having a hard time understanding what is so wrong with mainlander ways? Can we as a society not all come to compromise and live with standards that are being put forth in today’s situation, but yet still teach our youth the values, cultures, language and all the other aspects that Hawaiʻi and Hawaiians stand for?”
We were glad that he felt safe enough to pose this question, since being direct, honest and up front in this context of our hui is an important group norm. We explained to Mark the reasons why most of us don’t see it the way that he does. Kaleionaona started by articulating her view that “it’s a power issue.” From her perspective, the status quo does damage when schooling aligns itself with a dominant culture that seeks to make other cultures subordinate. Kaʻōiwi argued that in conventional schooling, whether it comes by omission or shaming, children learn that the ways of their family are somehow ‘less-than’ the other ways that come from elsewhere, and that does damage to their self-esteem and life chances.

Having attended all the way through grade school to college in Hawaiʻi I agree, because given the evident history of assimilation, loss and cultural trauma, it isn’t just a level playing field. Everybody has plenty of access to the dominant culture, and the Hawaiian culture should be equally as accessible and seen as equally valid. That means we have a lot of work to do.

Mark acknowledged this and countered, “From what I see, many of the kids I know who are of Hawaiian backgrounds, set goals to eventually attend college on the mainland.20 Would we not be preparing them better with [the] mainland way [of teaching] as younger children? I don’t know...again, just trying to make sense of everything.”21

---

20 The use of the word “mainland” here is controversial because it comes from a language convention in Hawaiian Pidgin that reflects an outdated perspective that the islands are somehow less significant than lands elsewhere. Many people in this community would choose to refer to “the continent” rather than “the mainland.” In this particular case, the speaker is referring not to the physical continent, but to conventions and ways of teaching that came to Hawaiʻi through Western European missionary practices.

21 Mark later revised his opinion, writing: “There were a lot of varying views of Hawaiian education and what it should be... I didn’t know too much about Hawaiian education but now that I’ve been in
Hoapili was frank in sharing his opinion that “Hawaiian [culture-] based learning is deeper…” He argued that by teaching in a Hawaiian way we do more than what the district expects of us. “We first have to change our thinking from to ‘meet standards,’ to this [expanded way] because [as Hawaiians] we are not segregated in our thinking but holistic.” Hoapili emphasized that “we are on a wave that friends and people from around the world post-contact are also experiencing.” To emphasize the sense of battling against a shared adversary, he read this quote that he had saved in his notebook to share:

This was said by Lord Thomas Babington Macaulay in his speech on Feb 2, 1835 to the British Parliament:

"I have travelled across the length and breadth of India and I have not seen one person who is a beggar, who is a thief. Such wealth I have seen in this country, such high moral values, people of such calibre, that I do not think we would ever conquer this country, unless we break the very backbone of this nation, which is her spiritual and cultural heritage, and, therefore, I propose that we replace her old and ancient education system, her culture, for if the Indians think that all that is foreign and English is good and greater than their own, they will lose their self-esteem, their native self-culture and they will become what we want them, a truly dominated nation."22

Mauliola for a while, I think it’s what the people you want to serve really want and need to learn. Make sure the education is connected to the past and that it is real, i.e., it has a real basis: authenticity from the elders, Hawaiian values… Hawaiian education should always be striving for excellence.”

---

22 In fact, this quotation is not known to be the statement of Lord Macaulay, although he did submit a written argument report to the British Parliament on the same date of February 2, 1835. His opinion on the question of how to approach language education in India was actually stated as follows: “All parties seem to be agreed on one point, that the dialects commonly spoken among the natives of this part of India contain neither literary nor scientific information… And I certainly never met with any orientalist who ventured to maintain that the Arabic and Sanscrit poetry could be compared to that of the great European nations. But when we pass from works of imagination to works in which facts are recorded and general principles investigated, the superiority of the Europeans becomes absolutely immeasurable.” In Macaulay, T. B. (1957). Minute of 2 February 1835 on Indian Education. _Macaulay, Prose and Poetry, selected by GM Young_ (Cambridge MA: Harvard University Press, 1957), pp-721-24, 729.
La‘akea argued that this same type of attitude toward the relative value of other heritages and knowledge systems (clearly evident in Lord Macaulay’s actual 1835 message to Parliament) arrived in Hawai‘i with the missionaries, but took its root through formal education. La‘akea went on to propose a solution:

I feel like this is a time of grabbing the standard Western idea of school and not only breaking it into pieces, but melting it, smelling it, molding it, transforming it, eating it, digesting it; doing everything in our power to break it down into particles so that we may dissect the aspects of it that work, but also get back to a place where we as a community take back our schools and together build a broader, more reflective concept of Hawaiian knowledge, schooling, and education. In the context of Hawai‘i, I feel the purpose of the schools is to facilitate and promote the journey of our keiki (children) to thrive, become ma‘a, (familiar with their contexts) and makawalu (examine and understand) the ‘āina, kai (ocean), and kauhale (community).”

From that point, our discussion took a different turn, going back to look at the purpose of schooling. We were energized by the question Leimana expressed: “Why is there so little healing in our current education system?” Through the charged discussion that followed, we came to agreement on four important outcomes that Hawaiian education should support:

1) Providing experiences that provide living access to the benefits of Hawaiian values, and that teach learners to see from a Hawaiian worldview, thinking from a Hawaiian perspective

2) Healing on all levels, including personal, cultural and global, so that pono can be reached;

3) Nurturing a desire for lifelong learning that emerges from knowledge of the past, is active in the present and which contributes to a positive future;

4) Building learners’ capacity to discern for themselves the context and setting that they’re a part of in any given moment, and to make an
informed choice about which ways to conduct and represent oneself accordingly.

In our different schools, we all have set “desired outcomes” for our students to achieve by the time they reach graduation (and those are very diverse), but here were four things that we could solidly agree upon across all the HIMENI contexts for teaching and learning that we represent. We thanked Mark for his questions, because it brought us to articulate some of what was behind our deep commitments to doing education in a Hawaiian way.

Kūpono brought us back down to earth from our abstract philosophizing when he described how focusing on these four things might affect Tevita, a high school student who he works with. As Kūpono put it:

I have so much aloha for him, as do his parents, and there is no way that any of us are going to just stand by idle and watch Tevita struggle when it comes to the technical, more Western aspects of education. If we were teaching and learning in the true ways of our kūpuna, I believe Tevita would be doing much better. He proves that by his ability to memorize information very easily, especially oli and hula, mele Hawai‘i (traditional art forms), and so forth.”

Kūpono was arguing that by going beyond the “mainland ways” [conventional model of content-oriented teaching] and cultivating development of the whole person through hands-on, constructivist and deeply memorable experience in context, Tevita would have more success as a learner and as a person. His critique of Western education as servicing only a fraction of the whole person’s intelligence is resolved in Hawaiian education because it cultivates the development of the whole person through a matrix that is rooted in direct experience and progressive development of expertise –
expertise that becomes linked to complex networks of meaning through place, symbol and kānaka (sophisticated levels of meaning embedded in language). La`akea shared:

In Western education, standards have been set that don't weave into the natural themes of learning, leaving a group of native people with an education that doesn't support them as a people. An education that looks in the past and present of the Hawaiian people would set the stage for the future. To understand what makes this group of people Hawaiian would be a great start for teachers of non-Hawaiian ancestry to begin with.

Lauloa reminded us of our kuleana as teachers, saying: “[It] is on our shoulders to promote this approach to education. How we teach is a reflection of what we have learned…. Everyone deserves to be educated in the culture they were born into.”

Hiipoi agreed, adding that, “We need to know who we are to survive.”

Yet the conversation was incomplete until Uluwehi made her voice heard:

Hawaiian Education is for everybody. Yes, it’s about the continuance of our ‘ike Hawai‘i [wisdom], and of our people. Our people will become healthy and thrive. We will grow our ‘ike; it is already happening. Hawaiian education - not the kapu (forbidden) parts that shouldn’t be shared- but the culturally appropriate things should be shared with everybody.

You can make an argument that all knowledge should be accessible to everyone. There’s many parables and mo‘olelo that tell you everything [if you know how to interpret]. Imagine if we knew everything! They weren’t supposed to-- think of Adam and Eve or Pandora’s Box— because with big ‘ike you have a big kuleana. Sometimes people don’t know what to do with it—like those people who make atomic bombs. All ‘ike [information & knowledge passed down] isn’t for everybody.

Wheels were turning in my mind as I jumped to think of memories of various cases of ‘ike (information) that were misplaced, and the natural consequences of that.

Uluwehi continued:
Having the wisdom to know what to do with the ʻike is something in of itself. Not every aspect of Hawaiian education is for everybody, but there are things everyone should know. Be aware of it, and practice it in the right context.

And by that, I mean in every classroom, certain things… should be the norm. In every single classroom, like, when you go places to wahi pana, you should know that you act a certain way. [It should be] that everybody knows [Queen] Liliʻuokalani’s birthday. They should know about the overthrow if they live in Hawaiʻi.

The way you greet one another. Interpersonal interactions with people. No matter what culture you come from, you should know the culture of the people in this ʻāina (land) – and practice it! Like how the plantation people came over and they learned to ʻōlelo Hawaiʻi (speak Hawaiian) because that was the language of the land. Because it was a necessity. Hawaiian language and Hawaiian ways should be taught to everybody who lives here.

We needed to hear what Uluwehi had to say, to be reminded that this is not an exclusive or “ethnocentric” movement, but one that is about preserving one of the many treasured ways of life on our earth. And it’s more dynamic than just “preserving” ka wā kahiko (the ways of old), it’s the actual hana that you do—now in the present, that helps us to know how to be pono in today’s world. To create a climate that allows us Hawaiians the ea, the freedom to grow, others must grow alongside and with us. That is a necessity for survival of our land, our way of life, and our ways of knowing and learning.

Similar to the way we wrapped the ule hala cordage earlier this week, or how we took our first steps of weaving simple bracelets from the hala leaves, we weave together this knowledge as we construct new forms for learning in our schools. The Niʻihau tradition, heralded in story and song, of weaving intricate Makaloa mats has had its peak—its era is faded. Yet in this historical moment we find ourselves
reflecting on the value of weaving and the customs surrounding the *moena* (a sleeping mat woven from hala leaves; a gathering place). Recognizing the value of the *moena*, we must consider whether (and how) to set aside the modern carpets and mattresses, and return to the tradition that has sustained us and been our *kahua* (foundation) for hundreds of years. We must solve this for ourselves, and there is no right answer; only reflecting on what is right for each moment as it comes.
**Aloha mai kākou.** I’m Mark and I come from Tennessee. Now I live on Kauaʻi with my wife Kaleohana, whose family is from Niʻihau, an island near here. We met at the University of Texas and she brought me back here to live on the Island. I only agreed to move because I didn’t really think we’d stay, but now that we’ve had kids, it looks like this is home. Ten years ago, when we put our two girls in regular school, it became apparent to me that they weren’t getting the kind of quality education that they would have gotten back in Texas. We could have put them in private school, but we just decided: somebody’s got to do something for all these community kids-- why not us? We were looking for solutions, so we went to the kūpuna (elders) from Niʻihau
who basically provided the language seeds for the Pūnana Leo\textsuperscript{23} language revitalization movement decades ago in the 1970s. We asked that community, now a different set of individuals, what they wanted to do since the HIMENI movement has moved forward and the overall landscape of schools in Hawai‘i is changing. We followed their advice, and now, seven years later, I’m teaching at Manaleo, an afterschool resource program that works with kids who mostly grew up speaking Hawaiian. We connect them with elders who pass on traditional practices like fishing, and we simultaneously help them develop meaningful technical language in real situations where they’d use ‘Ōlelo Hawai‘i (the Hawaiian language) so that they’ll build knowledge of heritage practices as well as advanced concepts and critical thinking skills.

If you’d told me thirty years ago that I would leave my hot shot career as a successful businessman and become an advocate for indigenous language and lifeways, I would have laughed you out of the park. But it’s happened. I now understand and speak the Ni‘ihau dialect (and the “university” dialect of Hawaiian when needed), and I do what I can to make sure that the broad freedoms granted in the UN Declaration on the Rights of Indigenous peoples are becoming a reality here. I’ll tell you what I think: you can’t do much at home if you’re always out asking for money. In my view, economic self-determination begins with this community exercising its right to teach and learn what it values. I’m proud to say that is an aim I contribute to every day in my own small way.

\textsuperscript{23} The ‘Aha Pūnana Leo is a movement that created “language nests” all over the state where preschool-age children and their families could learn to ‘Ōlelo Hawai‘i. They estimate that the population of Hawaiian language speakers increased from only 50 to 10,000 in recent decades. http://www.ahapunaleo.org/images/files/apl-ar2012-web-lowres.pdf
Now, I promise you I will be an indigenous ally for life, but my goal is to do this work only as long as I’m needed, and to build the capacity of other young people to step into these organizational shoes I’m filling right now, and to transform this program we’ve built as they see fit. I’m just a band-aid right now, until some Hawaiians come along who want to carry this forward. Business will always be out there for me to return to, but this is a critical moment in time; so much has been lost for these kids, these families, this way of life, yet there is much to build upon if we take action swiftly.

It was really an honor to be able to host the Mauliola cohort of teachers here on our home island this past week. We started the week by traveling to visit HIMENI schools in Anahola, Lihu‘e and Waimea, and we went to visit some of the wahi pana (storied places) near the area of each school. We went up to Koke‘e state park with our hui (group), led by Aunty Abigail, a kupuna from the area. She took us into Alaka‘i Swamp, and we walked out to Kalalau Valley to visit Kalehuamakanaoe, a truly extraordinary place that we’d recently read about in Ka Mo‘olelo o Hi‘iaikaikapoliopoele—yes, they give us lots of reading in the Mauliola program, but at least it’s interesting! Aunty Abigail came back at the end of the week and drove us out to the other side of the island near Hā‘ena. We learned permission chants, studied the protocols appropriate for the places we would go, and actually entered some very special wahi pana (revered places told of in legend) to give our ho‘okupu (offerings) there. The unmistakable greeting we received back from the ‘āina as we presented our ho‘okupu is something I will never forget.
I think we all were deeply moved by our visit to that place, personally, but also as teachers—because we experienced the profound connection that a person arriving for the first time can make through a proper introduction. It puts in perspective what a lifetime of connection to a place can bring. When we introduce our students to particular places, yes, they are learning about that specific place, but also building a foundation for future interactions. Important too is what they are learning about the messages and power latent within every place if each of us can ourselves learn to read the signs and interpret that meaning.

Being present in the actual places where the legend is enacted creates a compelling experience for us and for our students alike. Being on the very ground where Hi‘iaka brought life back into the body of Lohiau, or feeling the actual wind of Kalehuamakanoe on one’s face and knowing this was the wind that Pele herself spoke of in her challenge to Kiloe the mo‘owahine (a fearsome water spirit in the tale). By being there and learning from the land itself, we gained more than just an intellectual understanding—this experience of those places and the ‘ike ‘āina we gathered through our own sensory faculties is now a part of us. We are now symbolically and literally linked to Hi‘iaka’s journey, having walked briefly upon her path and interpreted her archetypal journey of “awakening the power to heal” in light of our work as teachers who are trying to heal our communities by reshaping schooling.

My students haven’t read the Mo‘olelo o Hi‘iakapoli‘opele in ‘Ōlelo Hawai‘i or English, but maybe we can do some kind of storytelling project that will expose them to these stories. I’m definitely going to find a way to prep my students, connect with Aunty Abigail and bring them here. I doubt that they’ve come to these
wahi pana with their families, unless they’re from a certain genealogical line; certainly not through public school. I’m also thinking now that perhaps we can make a point of visiting wahi pana, when we travel to Hawai‘i Island for the annual HIMENI student and teacher conference. We can prepare by studying some historical event that was told about in mo‘olelo and bring them to that site. I hear there’s no shortage of battles over on Hawai‘i Island, like the one at Hōkū‘ula that ended centuries of war, or at Pu‘ukoholā where the peace was finally made between Kānaka Maoli families nearly two hundred years afterward. So much to explore on our ‘āina!

We started the next day with a workshop taught by Aunty Iwi and two other HIMENI teachers who’ve used this method with their students. Using a three-meter string and rulers, they led us through the steps of creating a “line transect” as a way of focusing to identify and count species. We did one transect on the ground, one at shoulder height and one at 10 feet above the ground. We filled in our frequency charts with the names of flora and fauna that we could identify by sight, asking friends to share their knowledge and drawing pictures of the rest. Everybody assumed “this is a science activity” until we came back in and started to look at the data. First we listed the species with common and scientific names, then gave them colors based on their status as indigenous, endemic, alien or invasive. Averaging our pooled data at each level of altitude, we graphed their colors as pies and bars, and then drew visual icons to represent each of the species. Icons were labeled with percentages and, yet again, we saw the patterns visualized in a new way. Eventually an exercise transformed the icons into poems (written later on from different perspectives), and the poems were reshaped into equations, communicating the story of a changing forest. Who knew
what was possible to create from a string and ruler in the forest! Not one of us will ever forget the difference between indigenous, endemic, alien and invasive and while the scientific names of those aggressive invasives may not stick with me, the iconic features of their botany will—essential clues about what not to leave behind on my next forest walk!

On the last day of the seminar, we set up our tables and chairs under a circus tent that our program has for events, and started to debrief the week of study about place-based learning. The ʻŌlelo Noʻeau (proverb) theme guiding this week was:

*He aliʻi ka ʻāina, he kauwā ke kanaka.*  
The land is the chief, the people are its servants.  
#531 (Pukuʻi, 1983, p. 62)

The value of place-based learning was clear in this ancestral message, yet it was for us to unravel for our current historical moment, interpreted through our teaching practices.

The heat of the day relaxed and the golden rays of the evening sun poured into the tent, shining on our faces as we sat talking on the moena (mat). All week we’d been *holoholo* (traveling) all over the island and every one of us was grateful for a moment to be still, debrief and integrate. Aunty Ulumau and Uncle Mākoko asked us to talk about how our visions of 21st century Hawaiian placed-based learning are growing, changing through this exploration.

Leimana launched our discussion with enthusiasm:

“I really believe in the kind of place-based learning that the HIMENI schools are doing; it’s impressive, whether you’re looking at a statewide level-- at the amount of energy being put into cultural education, or whether you’re looking up close at the effects on one family, one kid -- it’s impressive.”
Lani holds a sort of contrarian role in the group, and we can count on her to be the skeptic or play devil’s advocate. She expressed her concern about the current methods of place-based learning:

“What I worry about is that the level of skill in these kids isn’t what you’d find outside, in other communities. We have to do better for our *ketiki*; they can have Hawaiian culture and the best of the west.”

Personally, I agree with this point. The other teachers at Manaleo gave me a hard time because I used to talk about having “the best of both worlds.” They say it’s not separate, and you go from place to place, having one single experience in one single world with multiple overlays of knowledge systems and values -- I hear that, but I still think it is two different worlds when you look at how different the valuable skills are, or the preferred ways of communicating and presenting yourself. I’ve learned that you have to know which world you’re in and fit yourself accordingly, like “in this world I’m going to make direct eye contact, be vocal and ask questions,” and “in this world I know my place is to listen, watch, and *hoʻāʻo* (try, to learn by doing) when I’m ready.” To me, that is how it is—two different worlds.

Kaleionaona disagreed with Lani and me:

It’s never just one or the other. Like how gender is on a continuum, sexual attraction is on a continuum… but we give these things labels that make them seem binary. There are multiple dimensions to reality, no matter how black and white it seems. We’ve got to prepare our kids to navigate a mixed and mixing world. Yes to geometry, yes to celestial navigation. Yes to oracy and storytelling, yes to digital video editing; it’s all available for our kids if we dare to introduce it. Why would we teach them that it’s this “or” that, Western “or” Hawaiian, when every part of the global experience and the local experience tells us that that isn’t how things really are?
Aunty Ulumau saw that we were headed for a debate about the relative truths of knowledge systems— one we’ve hashed out before. She tried to rein us in by asking us to focus on the children: How will we best prepare them through place-based learning to be a part of the many complex, intermingling worlds they may encounter in our 21st century globalized lifestyle?

Laʻaloa was quick and fervent in his response, saying his aim is to:

…Help them make decisions and answer the kinds of questions that we’re only just discovering. To bring the best of the past forward into the future, through their own lens. To make them ready to be as discerning as our Hawaiian kūpuna were.

Uncle Mākoko made a great analogy about this issue, comparing it to the way that we use language. He pointed out that knowing one language doesn’t take away from a person’s ability to speak another, and their choice to use one language in a particular situation doesn’t mean that they’ve become less of a member of the other language community. There need not be conflict in making adjustments, just situational reasons to use one language, or draw from one culture or knowledge system over another in the moment. He asked, “Are we giving our students the skills as well as the wisdom to make good decisions about how to use those skills?”

Uluwehi liked his analogy:

Yes! We need to give them that nuanced understanding that can only be built on the back of concrete experiences— ʻike that is applied, and therefore really yours. ʻIke is information, ʻike is knowledge and ʻike is understanding, but those three are very different things, to be learned in different ways. Our kids must be flexible depending on the situation, so we have to teach them in ways that build that [flexibility].
We talked for a while about how our ability to think through decisions about pedagogical strategies has been expanding as a result of this week’s ‘ike ʻāina and workshop experiences. Aunty Iwi had been away doing an interview and just then joined the group; she raised a new question:

In this seminar, we’ve been dealing with one of the key differences between conventional learning structures and place-based learning: multiple representations of knowledge. What are some of your insights about the power of using multiple representations as a teaching strategy in place-based learning?

Kaleionaona jumped in to offer her view:

In conventional learning you get a single version of the content: a textbook, a drawing, an equation… that is the “answer”, whereas in place-based learning, the answer can look all sorts of different ways, depending on the context that it came from, and the reasons/settings in which you’re going to use it.

Kaʻōiwi tentatively followed:

It’s like, in place-based learning, we pick the things that are really important, things that last, and then we teach those things in a variety of different ways -- all connected ideas, but some ideas are really meaningful to certain people, and other people connect with other representations. It’s like Howard Gardener’s idea of multiple intelligences; with place-based learning, there’s something for everyone.

Aunty Iwi pushed back with urgency in her voice:

“Yes, but how many of you, me included, are actually doing this every day, again and again. How many of us aren’t falling into the patterns we’ve seen and had done to us? Patterns we’ve been taught to follow. How many of you are doing the work of decolonization in every moment of your lives at home, and at school?”

After a long pause, Hoapili quietly offered his experience:
Since our last seminar, I’ve realized that what I’m doing, what I’m really doing isn’t like place-based learning. It isn’t even like project-based learning. It’s thematic. That’s something. But is that enough? Now I’ve seen I’ve got to go to a deeper level.

We all looked at each other, knowing how much we admire and respect Hoapili for his dedication to wa‘a (canoe sailing traditions). Eyes drifted down to our notebooks as silence fell. If Hoapili, with all his cultural ‘ike, could be off track in his interpretation of place-based learning, then about us who are just beginners in the culture? It was like we’ve been coming to Mauliola like a party, to celebrate what we’re committed to, and what we’re doing right. We’ve had these great experiences and positive new ideas for change. With Aunty’s exhortation and Hoapili’s revelation that night, things shifted; we let down our guard and started making ourselves more vulnerable. Since coming to Mauliola, we’ve been looking more closely, critically at our professional expectations. We’re now tuning in to the inconsistencies and things that don’t make sense about our schools’ structures and our own practices. The blind spots that Aunty Iwi was urging us to become aware of—the parts that are still colonized and stuck in the ways we were raised—now seem bigger than before. Thus the “confessions” began to flow into the night.

Kūpono’s revelation came first:

I want to be that radical teacher who goes out there and bucks the system and does everything differently; to be kūʻē (standing up for what is right) is my vision as a teacher. And then I ask myself, how can I be sure I’m not just brainwashing my kids—the same way they [my own teachers] tried to brainwash me?

Aunty Ulumau asked him to define what he sees as the differences between learning and brainwashing and we all grasped the contrast there. Uncle Mākoko
reiterated how using multiple representations of knowledge can synergize with the power of giving students choices in everything from behavior to demonstrations of knowledge.

La‘akea expressed the perceived failing she was most concerned about:

[In one class] it’s like we’ve hit a plateau and can’t go any higher with the skills they’ve got right now. Independent work times are just chaos—unproductive chaos that throws off some of the haumāna (students) who are more ADHD.

Kaʻōiwi brought up a similar issue she has been facing:

My students are doing amazing things but what I realize is that just their basic skills are really, really terrible and that’s what the public school left them with: barely able to read and write. We’re doing these awesome cultural things and I see them blossoming and I want to do more of that, but I have this dilemma because my students are barely proficient at reading and writing. Even though I’m supposed to be teaching them all the different content areas, we have to teach them reading and writing because they’re just not there yet.

Explaining her dilemma, she shared that her students are progressing well from their starting points, but their basic level of reading and writing is so low that she feels it’s a disservice to do anything other than just focus on the kinds of direct instruction and mini-lessons that can rescue them as soon as possible: “We want them to love language and story for what they are, not be hit over the head with grammar and sentence structure diagrams.”

Lauloa issued a heartfelt call for help:

I’m a history teacher and now with our schedule changes this quarter, I’m teaching a social studies and language arts hui for mixed middle and high schoolers. I’ve got to teach poetry. How do I learn to teach poetry? What do I do?
Kūpono and Kaleionaona both offered to assist; they planned a time to work together this coming weekend to get him started on basic concepts and share resources.

Pōhina, a forest-project teacher, is at the end of her rope with one class:

Their disciplinary level is so bad that I can’t even take them out into the forest where we’re going to do our work because they can’t manage themselves…It’s unsafe for me to take them to the forest because their level of interpersonal interaction is so bad.”

Several of us responded to Pōhina with stories of how we’d each suspended our planned lessons in favor of teachable moments, in favor of focusing on how to show respect and aloha. Caring for one another is always the first lesson, but many of those coming from conventional schools missed that lesson; relationship-building opens the path to learning for a lot of our kids.

Uluwehi recounted her struggles to make her curriculum material accessible to students in her mixed-age classroom:

Differentiation is such a challenge; our kids have such a range of skills in one classroom. Like highschoolers, but from fourth grade level to college level. How is anyone supposed to deal with that? Really.

Hoapili brings us back to “multiple representations of knowledge” as a strategy to address the challenges of differentiation for integrated math exploration:

You can do things where you’re specifically tailoring for certain learners but differentiation of the whole curriculum is hard. One of the key strategies for differentiation becomes making things accessible to everyone and trusting the learner to take out whatever it is that they needed. One of the strategies for getting through troubled waters is making it as authentic as possible, with as many multiple representations as possible because repetition helps too—and then also relying on one another for help.
I mention that I have seen this differentiation happen successfully before with my Hawaiian-speaking students. When I first started out, I had no idea how to connect with these kids. I tried everything at first, so unintentionally, I ended up generating multiple representations of the same information, and I saw how it worked. Something about the repetition that multiple representations of knowledge provides; they were able to get it (one way or the other) and grasp it and then they can run with it. It’s then that they can really use that knowledge in other ways and for real purposes. After we’d worked with contour maps for a few weeks, even my lower-skilled kids were able to use the databases and do interpolation, where they couldn’t even calculate the basic equations correctly at the start. Learning in that way gives them entry into all these other levels and areas where they have strengths—maybe even areas where they can show their expertise. I said:

Ask Uluwehi because she has seen my students’ projects; I get some of her ‘Eli‘Eli School kids after school. This is an example of a case where students are all focused on the same inquiry, based in the same experiential foundation of those maps and those places, but the methods that they use to unpack it all vary based on their skills. It’s a very Hawaiian thing to do, to let the learner approach it from wherever they’re standing at the time. They get whatever meaning they’re able to make from it. That they leave with the ‘i‘ini (desire) to learn more… That is the key.

Nohea got excited hearing that:

That must be a big realization for them too along the way, that some students are certain kinds of learners and other students are other kinds of learners and if you as the teacher can put it 360 degrees, there’s something for everyone.
Aunty Iwi interjected:

Yes! This is an incredible and essential synchronicity with the Hawaiian way—we have to do this to be coherent on a deep, deep level. Like when Aunty Abigail taught us the *Kunihi Ka Mauna* chant—she didn’t explain to us [explicitly] what it means, she let us wonder and interpret for themselves what it means. It means ALL of those things that we’ve encountered. Like spiraling upward as they go, developing networks of meaning that grow and expand over time. So how can we make sure that our units of study are rich enough so that there is something for everyone?

It was a rhetorical question the way she asked it, because we’d spent the week exploring those multiple ways in action. One thing we learned clearly though, is that delivering information is not enough to fulfill our role as teachers. Knowledge applied in places, gathered from connections to community, understandings gained through work are what help us gain the deeper ‘ike that leads to wisdom. We have to use the ‘ike ‘āina we’ve been talking about; we have to listen, to absorb. Without place and passion and purpose driving them, what will they really learn beyond what they could have gotten in a sort of mediocre way in the conventional schools? We give them that fire to become alight within themselves— and we see how being part of this learning ‘ohana changes them, makes them come alive inside themselves.

As a group, we set out to teach and thought we were doing the right thing; now we see more about what that means. We knew that things weren’t *pono* before, but now we’ve gotten closer up and put our hands in it and felt around in the muck. “What’s in there? What are we dealing with?” And it’s devastating, the reality.

Some of us will be leaving tomorrow with this big open question; a stone in the pit of the stomach. That tense, nervous, adrenaline soaked anxiety that has plagued
all of us from time to time in the form of haunting questions: Are we doing enough? Will it matter?

We’re here because we care, but hearing all the doubts and struggles the other day makes it so real and just cuts to the core. I’m filled and inspired by all of these places, all of this ‘ike, and I have to just trust for now that we have been opened up with this ‘ike ‘āina. We will continue to face the stark realities and show up to our kuleana, in time with the supportive environment of the school our students will open up and step up to take their places in our community and in the world.

We started the week with “He ali‘i ka ‘āina” (the land is the chief) and trust is how we’re wrapping up this week. Trust in the learner, trust in ourselves. Trust in this discovery process, and trust, most importantly, in the kūpuna that are guiding us and connecting us to past, present and future so that we can learn how to attain this vision of pono education that we are seeking.
Fourth Session: Mokulē‘ia on O‘ahu
As told by Hiipoi, a thirty-two year-old woman.

Welina mai. My name is Hiipoi Hakulani. My family comes from the island of Ni‘ihau, and like many of my family members, we now live on the island of Kaua‘i. I am a math and history teacher for middle and high school students at ‘Eli‘Eli School. My first language is the ‘ōlelo makuahine; I grew up speaking the language of my ancestors, and I am thankful for that. I learned a lot of English before I started going to school by watching TV. It was easy for me to see mathematics as sort of a third language that I could master, translate and interpret in my own ways. This success in math helped me as a young person to feel confident in school because I could tell that I wasn’t the best at communicating with words in English. I went away to college on the continent, and came back because I couldn’t live being away from my family and one hānau (birthplace). Working at the school allows me to live at home with my family and cousins, earn money, and give back to the community. There are job
opportunities for me because of my mathematics and history degrees, but being around my family comes first. We have roots on the island of Ni‘ihau, and for generation upon generation there has been a special connection between the families of Ni‘ihau, Kaua‘i and the remote side of O‘ahu where we traveled this week with our Mauliola gang.

We camped at Mokulē‘ia for the past week’s workshop on developing our teaching strategies—otherwise known as “broadening our pedagogical repertoire.” I am seriously not exaggerating when I say that I’ve responded to the question "What is your pedagogy?" at least thirty-five times since I started this program. The amazing part is that every time I answer, there are new things I can see in my practice to include, and the bigger picture keeps growing and changing. Another focus for us this week was reviewing and experimenting with different methods for planning lessons and writing up the types of curricula that we are constantly developing and teaching at our schools. We’ve met with several community instructors and kāpuna, people who are kama‘āina to this area (born and raised here), and they have introduced us to some of its wahi pana. I really appreciated how each one of them shared the concepts and curricula that inspire them as place-based teachers. They showed us their processes for turning lived experiences into learning experiences for their students.

Hearing their stories was important because, this way of teaching is new for all of us teacher candidates— I mean, we've been teaching it, and trying new things, but expanding our perspectives to reach beyond what is immediately visible in our school contexts has been really powerful. One of the reasons I look forward to coming to the Mauliola sessions is that I gain understanding by witnessing my peers' successes and
challenges in their teaching contexts. Every time someone gives a hōʻike of how
they've interpreted and applied our course concepts so far in their schools, I learn so
much about how to think outside of the box and solve problems. Hearing these elders
and experts share their tactics and strategies for teaching in a Hawaiian way was just
the medicine I needed to keep me going through this next quarter. I’m no expert in
what I’m doing, but I do know more about my situation than others do, so I’ve got a
basic foundation to work with.

Uncle Lucky Thompson who works at the Bishop Museum drove all the way
out here one evening to visit us; he told stories using all kinds of implements and
visuals. He explained that this approach was drawing upon the ancient storytelling
tradition of kiʻi, (images or puppets) but I would never have thought of doing anything
like it when teaching history. On the one hand, you think with amazement: "that is the
wisdom of a lifetime represented there,” and on the other hand you think, "it's so
simple, so symbolic, and so accessible to our students at any level.” That is really
Hawaiian, you know- accessible and interesting to everyone, regardless of their age or
level.

We gained a tremendous amount from our visits to the various wahi pana
including Makua Valley, and we shared adventures that that could only be had in this
area of Mokulēʻia. Some of our peers were initially disappointed when they heard we
were coming to this "country" or rural part of the island, when there is so much going
on elsewhere, but it is becoming more and more clear that when we gather for these
Mauliola sessions, it isn't just teacher education coursework that we're doing. It's a
more kind of whole-person education. We take these experiences, and assimilate them;
we become transformed through these sessions, and we return back to school as a
person that is changed, built on very deep foundations, but never going to see things or
most importantly do things the same again.

My buddy Leimana marveled to me about what he had learned through one of
our wahi pana visits to Waiʻanae:

There are moʻolelo [legends] and traditions there that are super
awesome. I see it differently now. I thought it was ghetto and dirty and
dry. I thought it was barren. But when you hear the moʻolelo! Man!
Those piles of rocks aren't just piles of rocks; it used to be a structure.
That is our history— that is our connection.

Seeing these places has deepened my understanding of the way that knowing
the land brings connection to one another, and to one’s sense of significance in the line
of past, present and future. When I left the last session, my drive to be a positive
influence on the future was fully charged. I made a commitment to myself that I would
set the bar higher for my students. It was difficult to face my own belief that my
students couldn't read a novel. I knew that sort of thing hadn’t come easy for me, but I
didn't see them displaying those kinds of extended focus and concentration abilities in
any realm of life. There were a few students who excelled when it came to fishing or
dancing hula— but those were physical things, not like math problem sets or weaving,
where you are sitting in a chair and just tune yourself into the work completely while
your body is still.

Thanks to our last seminar and Aunty Iwi's challenge to us to "go beyond the
edges” of what we thought we could do with our students. I looked at my own limits
and the limits I was assuming my students had. I came to terms with the hidden belief
I was harboring: that my students couldn't do what I had done at their age. Once I saw
it, and its subtle “colonization” of my teaching practice, I had to do everything in my power to shake it off. It's true that none of the middle schoolers had ever been asked to read a whole book before now, but just because they haven't doesn't mean they can't. Once I became aware of my own assumptions and blinders, I decided that giving my students access and confidence in their ability to work with books was the most important thing I could do for them. Even before I got back to school, I started talking with other teachers at ‘Eli‘Eli School who were in the program; I got their input and we changed my social studies curriculum to be focused around the use of novels. Lord of the Flies was a recent one, and then we read Night, by Elie Wiesel. The books were short and easily accessible; it was a triumph for some kids to finish, even though we took a long time and did a lot of shared reading activity.

Themes emerged from the text that I then connected with the social studies content; the kids were surprisingly skilled at engaging with those. I've never heard any discussions like that from my middle schoolers before; they were connecting the themes to their own lives, and stuff they’ve seen in the plots of movies. There's a level of maturity in their thoughtfulness and comments that I’ve flat out never seen before in their work. I'm thinking now that I'll use those themes as a jumping off point in the future to allow me to introduce multiple texts over the quarter, in a compare and contrast kind of way.

Two weeks ago, to finish up the end of the quarter, we had our Hui ‘Ohana– a family night where the kids hōike what they've learned and focused on since the last time we gathered. The families were thrilled to see their kids engaging in a whole new way with the course material. Instead of the oral presentations the haumāna used to
do, we jazzed up the themes and took a little artistic license with our fictional characters. One pair of students pretended to be the anchors of a news show, and the “reporters” came on stage with other students dressed as characters from the books, each telling their angle on what had happened. It got a little bit raucous at the end, but the presentations were so good I wish that I had been able to videotape it. We got so much positive feedback from the parents, tūtū (grandparents), uncles and aunts who had seen them reading regularly—not to mention the questions and suggestions about what the students might read next.

Admittedly, I'm not an English teacher, so I’ve been out in uncharted waters. But all of us teach all the content areas at ‘Eli‘Eli School— at one point or another. There’s a language specialist who comes in, and they often want me to come around to teach math activities, but each one of us has to be the main resource for our students; the home teacher guides their learning in all areas. It feels good for me to be branching out and testing the waters in more of a literary way, and it is clearly a skill I need to develop. My training is as a mathematician, and our discipline doesn’t exactly specialize in communication, so this is a genuine challenge. I've discovered that I need more strategies for facilitating discussions though, because I can see how the students really thrive with that opportunity.

Lots of the behavior challenges and issues my students displayed with focusing aren't really as much of a problem as before. When they come in, they know to sit down and just start reading with their literature circles from wherever they're at, or to respond to a question on the board; so it's a good routine we've established. I know
they're going to continue to grow, and Aunty Iwi’s challenge has proved to have a big benefit for my teaching practice and for my students.

This week in one of our Mauliola workshops, we learned how important it is to have a tight correspondence between our learning objectives and the actual experiences kids go through—to make sure that the experiences line up with the assessments and actually lead to real world outcomes that are meaningful.

Each of us teacher candidates shared the strategies that have worked for us and we went through a format for detailed lesson planning. It helped to put that format in our own words, and then to do it again in the Hawaiian language—-that was especially helpful because Aunty Ulumau talked us through the deeper 'ike of what you would call these things in Hawaiian, and I got to give my two cents as well. Hawaiian should really focus on the meanings, not just a transliteration of the English word. For instance, “kamepiula” based on the English word computer has no actual meaning at all but, to call your computer a lolouila, a lightning brain—now that means something!
With our newly interpreted vocabulary for lesson planning (*papahana, aʻoaʻo* and *māhelehele*), we all felt ready to move forward in understanding how each of these parts connects to planning instruction with real-world outcomes.

We cycled through the planning process again and again, each time starting with new community questions like: “How might we facilitate an informed debate about the pros and cons of introducing alien species like the gall beetle to control invasive *waiwī*?” For each cycle, we would identify real outcomes that we see as valuable, and mapping out the learning experiences and assessments we would use. Ultimately, the state standards may not be our point of entry, but they don't have to stand in our way either if we learn how to weave them in.
One of the most amazing moments in the group so far was one late night when people were having trouble sleeping due to some night time disturbances at camp; many of us stayed up late together circled around a campfire in the moonless dark. We went around the circle and told stories of the kinds of changes we'd seen in our own students since we started Mauliola. We were seeing similar kinds of changes schoolwide now that--unlike at the conventional schools they’d come from--kids were being assessed individually to see where they were starting from, and assisted in growing from that point.

Story after story was heard of parents who couldn't believe that their child was so enthusiastic to go to school for the first time in their life. Some of Kaleionaona’s parents told her: “I used to have to battle to get him out of bed; now he’s pulling me to get in the car and be on time for protocol!” We heard several anecdotes of parents who came in complaining: “What are you doing with my child?” and “All he talks about is how much fun he’s having; are you really learning anything?”

Lani spoke with amazement about what her own children were doing in another teacher’s classroom. Her fifth-grade daughter had planned, foraged materials, and executed a science project about composting completely independently. Lani’s eighth-grade son had gone from shy guy to a confident, malo-wearing hula dancer in half a year.

We talked about the reasons why so many of us were seeing such dramatic shifts. Some of our students had been tragically underprepared and left behind by conventional schooling; others had simply never been challenged before. Almost all of the youth we taught had never been recognized for the gifts they carried. As schools
and teachers, we began by looking for their giftedness, wherever it might be hidden. With the love of our school families as a foundation for learning, every one of us in that late night circle knew deeply that our students were growing in incredible ways.

Last fall, we all had filled out a survey about our teaching practices at HIMENI schools for a survey from some researchers. Aunty Iwi gave us a published article showing the results of the survey; the researchers confirmed what we were seeing and described the effectiveness of our strategies in quantitative terms. Our kids were doing great—much better on standardized tests than their peers of similar ethnicity in the conventional public schools. But what the researchers didn’t see or describe was the kinds of progress our students were making in the area of civic participation, oral communication, critical thinking, and scientific thinking. Their survey hadn’t been able to measure how our kids were taking ideas and practices home and sharing them with their parents—but we’re seeing that difference too, every day!

Kūpono told us about a wahi pana class he was running at Kamakani on Oʻahu. Together with her students, they were collaboratively researching and learning the stories of the wahi pana (special places) in a nearby ahupuaʻa land division, and studying oral presentation in the Kanaka Maoli storytelling style. During class, Kūpono’s students had begun the practice of telling the stories in the very wahi pana that the stories told of. Eventually he learned that on the weekends, they were voluntarily taking their families, siblings, friends up those rarely-traveled paths to the places where those moʻolelo took place and retelling them again! This was a marvel that we all take joy in, because reviving the oral tradition is fundamental to cultural
perpetuation. We know that those stories and storytelling skills are what have carried knowledge forward among the Kānaka Maoli until today.

Sitting there, around the campfire wrapped in blankets and clinging to cups of tea, our hearts were uplifted knowing that the oracy and ‘ike ʻāina that is at the core of the Hawaiian traditions in these islands is reaching the next generation. Regardless of our schools’ imperfections or our professional growth, nurturing a lifelong connection with this land is one of the highest purposes of the HIMENI movement, and we are being successful—each in our own place, in our own community, and in our own way.
**Fifth Session: ‘Ō‘ōkala on Hawai‘i Island**

As told by Lauloa, a twenty-nine year-old man.

Aloha mai kākou. O wau o Lauloa Franklin. Noho au Moku o Keawe, and the rolling hills of Maine are my ku‘u one hānau (the beloved “sands” of my birth).

Growing up with my rural, multicultural family, learning was a lot like the Hawaiian way of “nānā ka maka, hana ka lima;” we too watched with the eyes, and worked with the hands. Following after my grandmother, grandfather and uncles was a big part of my growing up years. I watched as they grew our food and medicines, preparing and preserving them for times ahead. Around the age of ten, I started attending a hands-on outdoor education school. My teacher encouraged me to keep doing what I knew already: watch closely and hoʻāʻo… try!

I remember in that class, once we had an expedition canoeing down a river and out to an island; we would stop to learn at different places about the natural features like rock formations and tide pool creatures. When I went on to high school and
college, I dreamed of going back to that kind of learning community, and that dream has now come true here on Hawai‘i Island. I could have gone to a regular teacher certification program, but this opportunity is what really inspired me to commit to the profession of teaching. Instead of being bored by having to teach the same thing over and over again, here I get to teach the ways of place-based learning that meant so much to me as a young person-- and I constantly learn from the wisdom of other teachers at Wailana Academy, my peers in Mauliola, and most importantly my students and their families!

Fifteen years ago I lived with a Hawaiian family in California, and although both my kids were born on the island, the connection I’ve made through ʻike ʻāina is what roots me more deeply to this land than ever before. In Maine, we had to be ready to build a shelter to survive a night of unexpected snow; we had to know what parts of a plant to eat and what not to, and the right season to dig a wild root to make sure that patch would still be a food source again next year. The ʻiʻini (desire) within me to learn and teach land-based knowledge has always been strong because I have experienced its enduring value, but for a long time I didn’t see how I could contribute to this land so far from home.

My mission is to have students practice skills in the ancient ways of living, so they can sustain themselves. I want to create a situation for my students where the child has a relationship to the soil and plants-- their knowledge comes from touch, smell and taste as they solve problems. They can always use science to do the same thing but they should not forget to use their intuition which is what indigenous education is about.
Within this HIMENI movement, Wailana Academy and Mauliola, my pathway has become clear. This is Hawai‘i, and people who are growing up here should have that sense of place. People growing up anywhere should have some sense of place so they can be conscious contributors to their place.

This week’s Mauliola session took us to ʻŌ‘ōkala on the forested slopes of Mauna Kea. We stayed in a narrow *ahupua‘a* (mountain-to-sea land division) that was once famous for being the “King’s Road” by which ritually-selected massive *koa* trees were brought down the mountain before being carved into canoes. This particular session was quite different than those that came before; we’ve always been in isolated areas with healthy home cooking and late nights but this time, instead of piling into vans, we walked wherever we went. The forest path outside our bunkhouse was the gateway to our classroom. “Authentic Assessment” was the session topic, which we agreed could encompass conventional forms as well as indigenous forms of assessment like *ha‘i ʻōlelo* or *hō‘ike* and other new hybrid forms we haven’t invented yet.

We ended last school year with this sense of everything we hadn’t done— the weight of all the problems. But I think we came in to this week’s Mauliola session energized because we are one quarter in to the new school year; it was exciting to gather together and discover what everybody is doing now with our new knowledge and questions. It was invigorating to hear everyone’s latest papahana plans: native birds (ecosystem restoration projects), *loko i‘a* (fishpond restoration projects), native dye plants and *kapa* (projects including science and visual arts through the cultural art of making mulberry bark cloth).
In ‘Ō‘ōkala, we spent more time outside in the forest than we’ve ever done before, and we discovered that a lot of the learning and formal discussion in workshops could actually happen in small groups as we uprooted and bagged invasive ginger in the native forest. Rather than reducing our concentration, it enhanced my memory of the time, linking information to moments in time and the places where we were on that side of Mauna Kea.

We traveled around with Professor Archer, a geologist who studies the cultural elements of geology through an anthropological lens. We visited wahi pana in the area once known as the home of great chief ‘Umi a Līloa, traveling from above the dwindling koa treeline down to the gulches. Listening to Professor Archer’s explanation of Hawaiian cultural practices and stone toolmaking traditions, it was almost impossible to believe he had reconstructed this complex information about human activity from analysis of soils and rocks alone. He told us of canoe-building practices and showed us evidence of how the stone for Hawaiian adzes was quarried. We discussed changing ecologies and the linkages between places atop the ancient mountain temple of Mauna Kea, and quarried stones found at various places, from the shoreline of Kaʻulupūlehu to the other end of the Hawaiian archipelago.

Connecting our huaka‘i (field explorations) and the concept of authentic assessment came naturally for our group because we’ve been learning to make sense of the analogies between these experiences and our teaching practice. Aunty Iwi is always ready to explain things explicitly if we don’t grasp it at first, but this time we were fully ready to absorb this course’s specific information about using more context-linked assessments like hō‘ike (demonstrations of knowledge before a real
audience), formative/embedded assessment, summative assessment, peer-reviews, portfolios, student work evaluation strategies, effective rubrics and the like.

Deepening our understanding of the value, types and uses of assessment is essential to our efforts because all domains of Hawaiian knowledge aim for mastery learning. For us in HIMENI teaching settings, we know that we need to weave assessment in throughout all knowledge and practice, because that is what shows us that mastery is being attained. Nā poʻe kahiko (the people of old) set very clear targets for performance and achievement. Kaʻōiwi told us the story passed down in her aunty’s family of their ancestor who was studying to be a navigator from the age of five or so. When he had completed his training decades later as an adult, his final task was to sail directly out to Kahoʻolawe and back. He missed his target only slightly, yet upon his return was advised that he must now learn a different art: taro farming.

From a Hawaiian perspective, attaining excellence (in one’s professional craft, in one’s life balance, in one’s relationships with others) is a primary goal, because the survival of the group demands it. Risking loss of the resources that went into building a canoe, its stock of food and seed plants, or the lives of the crew was simply not an option. High standards were communicated and enforced to ensure high quality of life. We have high expectations for our students to achieve excellence in their lives (whatever path they choose to take) and this distinguishes us as HIMENI schools.

For us as teachers, we are trying to do the best we can to help these kids, many of whom were stuck in a system that put them on track for a zero percent chance of success. With our kumupaʻa (foundation) of shared values, we can go deeper than what we have been presented by the Department of Education to teach. Hawaiian-
based learning is broader; it encompasses more aspects of life. To teach in this way, we first have to change our thinking from “to meet standards” to go beyond them and look at what our real standards are for living as a people. We have to have information along the way to help us to know if they are on target to reach that bigger picture or not.

We read in Malcolm Nāea Chun’s book “A’o” that in ka wā kahiko (the times of old), a teacher had only five or six students, and if the student wasn’t willing, he or she simply wasn’t taught. Elders would observe a child for years and understand her gifts before recommending that she study with a particular master. Today’s students have compulsory schooling and must study all subjects, not only the ones he or she has a passion to pursue. The structure for schooling has changed, so our strategies have to be updated as well. As teachers, we have to concern ourselves with how we can make sure we are getting frequent, diverse data from multiple sources about how our students are progressing in all areas. That idea turned out to be one of our group’s key takeaways from the session this week, along with a solid grounding in using specific strategies and tools like analytic rubrics to better describe the knowledge and performances that matter.

The other big thing that came up this week in so many different ways was these questions: “What do we ultimately want our students to be masters of? What kinds of knowledge are really worth passing on?” We put all this energy into creating papahana (projects or units) and māhelehele (lesson plans) that help students learn information about the world, but are they helping our students to become good people

---

24 Before publishing his 2011 book called “No Nā Mamo,” Malcolm Nāea Chun released each chapter as a separate booklet. The portion called “A’o” was later published as part of the larger volume.
who make good decisions? Are they helping our nation to flourish and the life of the land to thrive? We asked ourselves again and again: Why teach anything if it isn’t really worth knowing and doing for the rest of your life?

Kaleionaona told a story of the time when she traveled to an indigenous conference on the continent where she heard Musqueam elder Rose Pointe speak a message that touched her deeply. Grandmother Rose emphasized that:

The reason that we pass on these teachings is so that we will know serenity and peace and be able to live together in harmony. And that’s the reason that we pass on the teachings that are required for life. The way that we know this is “Are the children being loved?”

Grandmother Rose was sharing her most fundamental criterion for assessment, and it compelled Kaleionaona to ask us: “What is yours?”

“How will you tell whether our HIMENI efforts have been successful?” and “How will you know if your efforts as a teacher have been worthwhile?” were the questions of the day. Uluwehi jumped in right away to say that the key target by which she assesses progress in her community is the question of “Are our youth learning the language in its authentic contexts for use?” Uluwehi pointed us back to a particular paragraph in one of our older readings on “Resiliency in Native Languages” that she had copied into her journal:

To lose your language is to lose the soul of your culture, and when the language is gone you are forever disconnected from the wisdom of ancestors; the loss of language inevitably results in losing the gods you pray to, the land you live on, and your own government and sovereignty (Aguilera & LeCompte, 2007, p. 11).

“Knowing this,” she asked, “How can we let our language die?” Uluwehi went on to say:
We all believe in the power of the language and its teachings and [are ready to] make things happen. We all can make things better here, and our work inspires those abroad as well. We as Hawaiians are willing to help the other native groups so we can all support each other in achieving the goals that we have recognized.

While her plea was articulate and compelling, it was the beginning of much discussion. Some of us supported language revitalization as an indicator, but language alone is not enough if our speakers are merely translating English thoughts into Hawaiian vocabulary. We debated this and some were inclined to make claims about the need for a Hawaiian worldview as the key asset, but how can that reliably be assessed? As a group, we reflected on this throughout the week and saw that we do need clarity about the targets that we value if we are to encourage and assess our students’ growth justly. We came to see that it’s worth putting time into developing assessments because it helps our students (and ourselves) to understand what the products of quality, valuable knowledge development look like, in service of our bigger picture goals. As HIMENI teachers, we have to stay focused on what really matters in a lasting sense— however we choose to define that in our local community. Further, we need to assess across the scope of the things we value, not just the state’s required indicators. One afternoon this week we had time to share our papahana (project plans) and give each other feedback, so I kept this question of the “real value” of this project in mind as I restructured my plans.

Developing our papahana was a major focus and we worked a lot together this week to come up with a structure that made sense in both Hawaiian ways of thinking and that fits with the English terms and concepts that are already the convention at some of our schools. Although putting our plans down on paper was awkward for
many of us, we stuck with it because you could just see how the structure of the whole thing became better with every debate and draft.

The native plant poems project I had written up for my three-week summer camp with fourth and fifth graders is now transformed into the “Moʻokūʻauhau Project” on genealogy. The lasting value it offers is to give students an understanding of how to formally introduce themselves to a place or a person. This will deepen students’ understanding of the value of knowing who and where they come from, and
will also strengthen their ability to use ‘Ōlelo Hawai‘i. Right now, the lesson reads as follows:

**Learning Objectives (Targets):**

- To make it possible for students to introduce themselves using correct Hawaiian protocols
- To bring students closer to their families (biological and adopted) by asking them to gather family stories and genealogical information
- To help students feel a sense of belonging and pride, and an ability to contribute to their family

**Learning Experiences:**

- Students will research ‘Ōlelo No‘eau (wise sayings) to instill ha‘aheo (confidence, pride) in them and their ‘ohana
- Students will read mo‘olelo about Pele and Hi‘iaka
- Students will visit wahi pana to deepen students’ connection to their moku (island), and to develop knowledge of this place (Puna)

**Assessment Targets:**

- Written final draft of their mo‘okū‘auhau genealogy (revisions to final printable draft)
- Recite the mo‘okū‘auhau properly
  - Hō‘ike the mo‘okū‘auhau for others
- Journal and share reflections on the wahi pana visits
- Curate a set of photographs with symbols related to the ‘Ōlelo No‘eau (later we can to create cards, or create plant riddles)
- Use daily self-assessment rubrics, and end-of-the week goal setting sheets that I’ve developed to help them become more reflective on their progress and needs.

**Real World Outcomes:**

- Ho‘olauna when we visit wahi pana of Pele (introduce themselves according to cultural protocol, using the mo‘okū‘auhau genealogy)
- Present at least one side of their ‘ohana with a final draft of their mo‘okū‘auhau genealogy, along with writings about their memories or associations with family stories that were shared.
After doing peer review on our lesson plans, we selected one outcome for which to create an actual assessment tool that we’ll use. Lani and Hiipoi were working together on this assessment development exercise, and they introduced the word “waiwai” to actually specify two different types of learning outcomes. Their list of assessments had two sections including “Waiwai Hawai‘i” (learning value seen from a Hawaiian perspective) and “Waiwai Peleka” (learning value seen from a Western perspective). When they presented their new assessment tool to the group, that division sparked a big controversy. I see how it is a useful distinction for them to draw, because those things don’t always overlap or even come close. But I don’t think this is a useful division to introduce to our kids. Knowing your waiwai must be based on an understanding of Hawaiian values within the global context that we live in today. If students are going to implement Hawaiian values in their lives, then they have to be able to identify with them, even as they connect with others across many settings of life– the multiple worlds we often mention. Dividing and taking sides doesn’t benefit their sense of self or their life chances.

I think we had been pointing toward the concept of waiwai all week with our questions about “What is valuable enough that it is worth passing on?” Lani and Mark just gave us the right language to talk about that kind of enduring value. *Wai* is the Hawaiian word for fresh water, and *waiwai* is a reduplication of that word which, taken literally, would simply intensify its meaning. But *waiwai* has a figurative meaning that signifies much more: it connotes wealth, the kind of true wealth that money can never buy: fresh cool water, a bountiful harvest of *kalo*, having your loved
ones healthy and happy by your side. *Waiwai* is the kind of wealth that life wouldn’t seem worth living without.

As teachers, we’re trying to get to a place of *pono* within ourselves, and instill that *pono* in our students to have them be able to use their *naʻau*, (gut; intuition) in order to navigate and make choices in the world that are going to be beneficial for them and their family as well as the community at large and the globe. With that goal of *pono*, we ask ourselves, what is the *waiwai* that will help us get to that point? How are we going to spend our precious time together? What will we actually do? Are we going to do a robotics project or are we going to do a native bird survey?

Robotics is pretty high-tech and cool, maybe even a lot more convenient for a teacher. It’s hands-on learning and it could be project-based depending on what you do with it-- but ultimately, is robotics *waiwai*? Can it be linked [by function, analogy, narrative or metaphor] to that matrix of concepts, [aesthetics] and practices that we treasure and want to pass on from generation to generation?

As Aunty Iwi encourages us again and again to notice, we are all at various stages on our own journey of decolonization and reconnecting with cultural values. Doing this, we are walking that path that we lead our students upon. I’m starting to recognize in myself how it feels to face difficult choices-- I mean, real dilemmas like this question-- when it comes to putting cultural values first.

Lani said that before our courses, she would think: “Oh, I see how the cultural value of *mālama ʻāina* (caring for the earth) translates to us doing the native bird survey.” Now we’re all coming to see that the *waiwai* in the native bird survey isn’t just about learning to identify the birds, learn ʻ*Ōlelo Hawaiʻi* vocabulary, or being out
in the forest to listen and discover ʻike ʻāina. It’s not just about contributing to a scientific study that’s taking place across the island, or having the students get to be in that role of being apprentice scientists. There is waiwai in all of that, but it’s also in our hands-on contribution to restoring a forest system and a watershed that gives life back to us and to future generations. Once we begin to experience the project, going for the waiwai always takes us deeper.

To allow ourselves to be guided by the land, by the ʻāina, by our own naʻau—to choose what is right for our students. We must ask ourselves, “What is really waiwai for them to do, to learn and [to] pass on?” When we focus on the waiwai of the learning experience, then they will be able to expand outward from there. As Leimana put it, “we must inspire students to see that education or [rather,] the exploration of learning, goes beyond school; it is our journey in an amazing world.” Exposing them to what is truly waiwai through our curriculum is what will get them burning and alight to go and develop their skills and themselves for a purpose.
Sixth Session: Kaʻulupūlehu Ahupuaʻa on Hawaiʻi Island

As told by Kaʻōiwi, a fifty-six year-old woman.

Aloha mai kākou, o wau o Kaʻōiwi Manamana. I come from Kohala and my ʻohana has always been really pili (closely bonded) to each other, and to the old Kanaka Maoli ways. We were all raised together in a community where everybody knew you and exactly what you’d been up to, so it was hard to stay out of trouble! Being from our remote area, we didn’t have too many outside influences for a while and lot did get passed down. We have mostly Hawaiian ancestors with a few Germans who married in. My grandmother spoke the local dialect of Hawaiian and I understood it, but my parents taught us that it would be harmful for us to learn it because it could keep us from being successful. I’m learning to speak ʻŌlelo Hawaiʻi again on my own

(This photo of pāhoehoe was taken by Kaʻōiwi at Kaʻulupūlehu)

---

Also known as Kaʻupūlehu. The place name gives the image of “the roasting of breadfruit,” and evokes a story of a time when Pele visited the ahupuaʻa in disguise.
now and even though I understand the language and some of it’s deeper meanings, it very hard for my aging “aunty” brain. I have adult children, but my longing to speak the language of the kūpuna (ancestors) makes me feel like a keiki (child). Many of my peers in this program and at the schools are a generation younger than I am, but I’m here for my moʻopuna (grandchildren, descendants)-- to make a better place for them and for the students that I work with.

Nowadays, I teach middle schoolers at Punahoele School; and I also teach extracurricular programs and physical education for a private school serving special needs students who are mostly of Hawaiian ancestry. The numbers are extremely disproportionate-- and if you’re wondering, hell yes, that makes me angry. I’m angry about these young kids’ lost opportunities; I’m angry about everything we lost in colonization, our traditions, our language, our land. In the last ten years, they’ve put up gates everywhere, so now we’ve lost even the simple access to places that hold our stories, our children’s ‘iewe (placentas, placed at the time of birth), and the plant and animal resources that our families have been using and taking care of for generations. Every day I look for ways to be grateful for what we still have.

This HIMENI movement deals with these issues through education, and I believe it is a pono way for us to reclaim identity and work toward self-determination. I pray every day that it will work, for the benefit of nā mamo (future generations), for the life of the land, and for the people of the world who will someday realize the beauty of what we have here.
We traveled to the *ahupuaʻa* of Kaʻulupulehu to take our most recent course called “Reading the Land, Reading the World.” It addressed all kinds of literacy, as we would see it from the perspective of place-based learning. The instructors had us focus on theory and pedagogy for traditional reading and writing (like literacy circles) as well as on pedagogical strategies for carrying on traditions of oracy in our culture like *haʻi ʻōlelo* (extemporaneous speaking), *nāne* (riddling) and *hoʻopāpā* (debate). We explored how the reading of places, and the knowledge of how to interact with and interpret the land is also an essential part that we must cultivate as HIMENI teachers in order to guide our students well in the methods of place-based learning.

Uncle Mākoko and Aunty Iwi were with us as always, and were joined by local resident Uncle Keala who took us up to the dryland forest, as well as Aunty ʻŌaʻōa who was a teacher with a gift for storytelling. With us were also two university professors of literature, including one who specializes in “literature” as understood within the Hawaiian oral tradition.

This session we used different interpretive tools than in the past -- metaphors played a big role in the week; we practiced looking at things from perspectives that were different from our own. We did a lot of our own storytelling, interpretation and
visioning, using the land as our inspiration, while applying methods from theatre, drama and improvisation to make them come to life. These are the kinds of interpretive methods that we can now find ways to use with our own students; it really helps that we’ve had these experiences to remember and draw upon as a foundation when we move forward.

I will never forget the day when Aunty ‘Ōaʻōa took us over to the kahakai (shore) where a hidden, underwater spring flows forth from underneath the ocean. She told us the story of how in that very place, the akua Kane brought life to his people by sacrificing his own. The water of that spring continues to give life to those who dwell in the intense sun of the Kaʻulupūlehu area.

The following evening, Aunty ‘Ōaʻōa returned for a sunset storytelling session. In dramatic voice, she shared the moʻolelo of Lāʻieikawai, the first kaʻao to be published back the late 19th century. We’d been assigned the book as reading, but sitting around a circle in the twilight, we experience how different it is to hear the
moʻolelo told-- and in the very place where those ‘epic’ events of love and battle actually happened. We heard tales of salt gathering on the Kalaemanō coastline where natural basins of salt supplied people of the Kekaha region with salt. We learned of the niuhi shark that is known in this place, and saw for ourselves the Hoʻolua wind that blows down from the mountain and dances with the ʻEka wind that comes in off the ocean at midday.

Mauliola sessions always have involved a great deal of discussion and reflective writing, but we wrote five times more this week than any other. Most of our writing was creative and integrative; we constructed metaphors and unpacked symbols, daring to be poetic in their description. On Kauaʻi several sessions ago, we were introduced to improv through an exercise in which we had to make a “machine.” Each one of us made a sound and a gesture that represented a moving part in the machine, and we would build on by inventing and adding our personal contributions to the machine one at a time. After trying a couple of themes (like “zoo”) with amusing and chaotic results, the leader asked us to make a machine that represented Hawaiian education. From the first person who laid down on the ground and made a swishing sound, to the last who stood facing the wind and chanting, we were in complete unity of vision and expression. We marveled (in the moment and in many conversations afterward) at the feeling of connected presence in the room. The image born from that exercise gave us the gift of an enduring metaphor that we all could use to describe our movement’s work: the waʻa. Each person played a role: the manu (bow and stern endpieces), the ʻiako (outrigger boom), the mast, the sails, the rudder, even the hoʻokele (navigator)… together we made a Hawaiian sailing canoe.
This historical photo of the Hōkūleʻa illustrates the appearance of the kind of waʻa kaulua (Hawaiian double-hulled voyaging canoe), that the HIMENI teachers constructed with their imaginations and bodies to represent their work.26

The metaphor of the waʻa for Hawaiian education has been with us powerfully resonant way ever since that day. We revived it again this week in our dance with imagery and metaphor, and one afternoon Aunty Iwi seized upon it, asking us:

We have come together as the canoe, and we are paddling hard… but where are we heading?” Not waiting for an answer, she asked us to muse on her next question: “How will we know when we get there? What will it feel like when we’ve reached our destination as a movement?”

Though we didn’t answer it then, the seed was planted and our visions started to emerge as we took part in various reflections, writings and discussions. Our week was full of ‘ike ʻāina and dynamic realizations, but most crucial was the liberating insight that there are many, many literacies… each with their own multilayered,

26 Hōkūleʻa is the Hawaiian voyaging canoe whose construction in 1975 reinvigorated interest in the ancient Hawaiian tradition of sailing across the Pacific. More photos and history are available on the website of the Polynesian Voyaging Society: www.hokulea.org
sophisticated and nuanced symbol systems. Together, we broke out of the box that most of us had been raised in to believe that “reading and writing” is the only literacy that matters. We listened, scripted, mimed, rhymed, chanted and monologued our way through to a new experience of literacy, one rarely spoken of as valued; a literacy that begins here, with our own place and expands outward.

I see now that literacy is a creative process, one that is collaborative and social. Literacies are like woven fabrics patterned with threads of meaning, symbol and interpretation, laid out over time on the loom of experience. Such complex, embedded patterns could never be woven effectively by rote memorization, or imprinted by the rubber stamp of a standardized test.

As a group, we came together yesterday afternoon to publish a chapbook of reflections on our time in Kaʻulupūlehu. We worked quietly and fast, with some people typing up journaled thoughts, others dashing out last poems, and a few curating photos to complement the writings in the layout. That feeling of working together as a team to support each other’s voices and creative expressions buzzed like an electrical charge in the room. In our debrief, we agreed that every one of us wants our students to feel that same sense of inspiration, from making new connections, and the power that comes from creative contribution.

Once the book was done and the printer was humming to produce our copies, we took some reflective time to focus on to Aunty Iwi’s question. Recognizing that we’re all making the HIMENI movement happen together, she asked us “but where are we actually going?” An important question because, like our voyaging Polynesian ancestors, we know we’re traveling to a destination that is fundamentally unknown to
us. Now that we’ve set upon the journey, reaching that destination will determine our survival as carriers of language and cultural traditions.

Like they, who selected “canoe plants” like niu (coconut), wauke (paper mulberry), kou seedlings and kalo to bring along to replant and repopulate their future, we too must decide what essentials of the ancestral past to nurture and propagate into the future. What is the waiwai that is most essential to carry forward into our collective cultural memory?

Those ancestral travelers arriving on the shores of Hawai‘i had to assess the new land to determine if they could live there in a dynamic balance with kanaka, akua and ʻāina (people, gods and land).

They observed carefully and watched for hōʻailona (signs and omens), as many of us teach our children to do in HIMENI schools. But how will we as teachers—and as a movement—be able to recognize when we’re on the right track to creating a system that is truly Hawaiian, even as we open our doors to all knowledge and all comers?

Our discussion focused on this question, carrying on into the evening. By the time we broke out the ‘awa, we’d determined that that we will never “arrive” at our vision because by nature, that vision will always be changing, just as the times change.

But we can assess whether or not we are on the right track, by how the process of teaching and learning feels. If we are doing things rightly, then we will recognize it by that feeling of ea, breathing freely, having the chance to inhale and exhale with
ease, to follow guidance from akua and naʻau, all along the way. In time, we should see results that allow us to live life on the land, unimpeded by fences, laws or other barriers restricting access to our own home.

We will be a part of bringing about changes in the situation over time. Children will have opportunities grow up and learn in their own style, and discover their inborn gifts and the things they are passionate about. As teachers, we will become free to discover our own personal teaching style-- and have the flexibility to practice it, to teach the things we believe are waiwai for the world of today and tomorrow.

Laʻakea shared an example of a situation at Punahele School where she felt the longing for a future where that ea can be felt. She explained what had happened to her a few weeks before, in preparation for a student-run community event:
We were supposed to gather the fruits [of the *hala* tree] to make the *lei*. I got informed the day before that there was a meeting with some landowners who were applying for a permit to build a house on conservation land that is right next to my family graves. I took my kids down there to show those people how we are actually using the land, and continuing a very ancient practice special to that place. These are the kinds of things we’re trying to learn about and to stop. By teaching students the different plants, and how they’re used, they understand and can advocate for the larger picture of why it’s important to protect our forests.

If we were truly free here in our homeland, we could feel the *ea* because no person would seek to cut down conservation lands that sustain heritage practices to build a home; they would already know the value of those lands and traditions due to educational experience that had taught them about the significance of ‘āina. In a time of *ea*, no one would try to pry through the legal system to build oceanfront mansions on top of burial grounds, as we saw firsthand on our visit to Naue in Kaua‘i. Every resident of Hawai‘i would know the value of the *iwi*, the bones, and the *mana* that they carry in the Hawaiian tradition.
Ea would mean that we would not have to fight to stop construction of a massive new telescope on the top of Mauna Kea, our mountain, held sacred across the Pacific, yet unrecognized by our own elected officials as worthy of respect. There would be no need to lobby the military to reduce its “footprint” in a time of ea, because they would know to practice mālama ʻāina and clean up depleted uranium wastes on the slopes of our temple.

Sustaining the land that sustains us is the Hawaiian way; kanaka, akua and ʻāina will be honored again in that time of ea to come.

Perhaps because it was our last night together, or because we had bonded in a new way through our “dramatic” endeavors, the night grew long, yet we were still
charged up. We came up with this list of indicators that will help us recognize favorable conditions when our educational system is heading in the right direction, toward a state of *ea*:

- **ʻĀina** (that which feeds us, including land/sea/sky/earth) will be the source for all curriculum and explorations; the experience of the ʻāina gives rise to all content and theory.

- **Wahi pana** (storied places) will be cherished by all; those who care for them and encounter them, will protected and restore *wahi pana*, passing on their *moʻolelo*, traditions and genealogies.

- **Leʻaleʻa** or “feeling good” is a part of every possible stage in the learning process; learners bring their whole selves to learning. They hana pono and have fun!

- **Ma ka hana ka ʻike** is the primary way of learning; knowledge is developed through watching, listening, moving, doing, engaging, applying, and trying again.

- **Huli ka lima i lalo** Turn your hands to the earth, and plant seeds of aloha; make solid preparations, and form good relationships. We can trust that the seeds we plant will come to fruition.

- **Hoʻolono** to attend, watch and listen deeply with all the senses – including the *naʻau* (gut or heart)– in order to understand and know what is pono.

- **Waiwai** or true wealth forms the value at the core of learning experience where understanding is created; learning opportunities have many layers of significance and meaning, some of which are only revealed with time and experience.

- **Kū/Mū** (resist/allow), become expert at knowing when to stand up (*kū*) and be *kūʻē* (mount resistance, challenge the status quo), and knowing when is the time for *mū*, to be silent, listen, let go and allow.

- **Ka Muʻo** (the unfurling leaf) Knowledge is allowed to unfold naturally over time, for that is the way of all life. We are both teachers and learners; we no longer have to push. Wondering, solving, enjoying, and being patient all lead to beneficial learning and mastery for those who choose it.
Treasured is the vast knowledge of the Hawaiians. It is not “forgotten knowledge” when we remember and practice it. Pass this knowledge and these ways of knowing and valuing to the youngest generation with precision, and they will live in the hearts and practices of future generations, inspiring those who are yet to come to care for this land as we do.

Picturing a metaphoric island in the distance, shrouded by clouds, we answered Aunty Iwi’s question: What then, is our “destination,” on this wa’a of Hawaiian education? Ea. How will we get there? By working hard and constantly striving to be pono— and through practicing the Hawaiian values that the kūpuna left to guide us.

Today I have hope that we are already creating and giving birth to a new style of education that is based on ancient and tested patterns of relating. Any and all information that we choose to integrate can be used in the service of nurturing Hawai‘i, our places, our worldview and those who seek to connect with our island home.
With gratitude…

Mahalo e
Mahalo e ka lehulehu,
Mahalo e nā mākua
Mahalo e nā kūpuna
Mahalo e nā ali‘i o Hawai‘i
Mahalo e nā ‘aumākua
Mahalo e nā akua
Mahalo e$^{27}$

---

$^{27}$ Gratitude to the innumerable ones, gratitude to the people, gratitude to the elders and ancestors; gratitude to the chiefs of this land, gratitude to the ancestral guardians, gratitude to the deities.
Chapter 4: HIMENI Teachers’ Conceptual Framework - Eight Emergent Themes

Introduction

In the previous chapter, we “traveled” with the HIMENI teachers and heard their voices as they explored their motivations, needs, challenges, dilemmas and visions for HIMENI education. The teachers spoke metaphorically about their movement, describing their schools like a wa‘a (canoe) navigating its journey along an unknown route. Together, the HIMENI teachers pictured themselves traveling toward a long-envisioned state of ea, where teaching and learning is supported in all areas of life, and knowledge development is unconstrained by legal impediment, structures of conventional schooling or colonizing epistemologies.

In this chapter, we look at how the HIMENI teachers drew upon the corpus of Hawaiian cultural values to help them progress along their professional journey. Data analysis showed that, during the course of the first five years of this ethnographic study, the teachers continually referenced eight specific cultural concepts that informed their changing teaching practices: pono, hana, lawena, laulima, na‘au, nalu, makawalu and maka‘ala (see definitions in this chapter). These cultural values were each cited individually as the reasoning and inspiration for professional decisions, language choices and teacher ‘moves’ in response to changing situations. While the teachers did not have any set example to follow of what twenty-first century Hawaiian education ‘looks like,’ they repeatedly referred to this subset of cultural principles as

---

28 Donald Schōn gives us the term ‘move’ to describe the way that professional action embodies choices and hypotheses (1987). When a teacher makes a move, it may be the product of automaticity or reflection; at its best, a move embodies a teacher’s intention to explore, test or develop knowledge about features of the learning ecology.
guiding their action in their work to better align their practices with the aims of the HIMENI movement.

It is important to distinguish between the way that general cultural values are thought of in society and the specific ways that the teachers drew upon these themes. This chapter focuses specifically on the eight themes (described in Figure 2 below) that emerged as teachers sought to interpret the values in practice. For purposes of clarity, within this chapter, the names of the HIMENI teachers’ themes are capitalized; Hawaiian words in general use are italicized as usual. This is intended to make it easy to differentiate between the two distinctive usages, since the eight themes all have names that match or closely parallel Hawaiian cultural values.

<table>
<thead>
<tr>
<th>Cultural Values informing HIMENI Teacher Practice</th>
<th>Brief Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pono</td>
<td>A way of being that seeks a dynamic balance of conditions; righteous harmony amidst ever changing circumstances</td>
</tr>
<tr>
<td>Hana</td>
<td>\textit{Ma ka hana, ka ʻike}; through work, understanding comes. It is through practice that one learns</td>
</tr>
<tr>
<td>Lawena</td>
<td>Take the knowledge that is given to you; deepen it, live it and share it. Relationships are a foundation for knowledge.</td>
</tr>
<tr>
<td>Laulima</td>
<td>Many hands working together; the power of the group does what an individual cannot do alone</td>
</tr>
<tr>
<td>Nalu</td>
<td>Riding the wave; willingness to go with the flow and respond to opportunities as they arise</td>
</tr>
<tr>
<td>Naʻau</td>
<td>Gut feeling, intuition, the “heart” and the intellect; regarded as a tangible source of sensory input (like hearing)</td>
</tr>
<tr>
<td>Makawalu</td>
<td>Literally, looking with eight eyes; considering an issue from multiple perspectives to forecast the possible impacts</td>
</tr>
<tr>
<td>Makaʻala</td>
<td>Paying attention; observing carefully with vigilance and responding to what is seen with action</td>
</tr>
</tbody>
</table>

\textbf{Figure 2.} Hawaiian cultural values informing HIMENI teacher practice.
Teachers developed new patterns of instructional practice through reliance upon these principles; they discussed, interpreted and applied them as they designed and orchestrated student learning experiences. During the course of their participation in this research study, the pedagogical strategies and patterns they enacted in their teaching contexts began to take on forms different from those that are familiar in conventional schooling. Reference to these themes informed design of learning experiences that allowed teachers to transcend the pedagogical formulas for “knowledge transmission” that they experienced in school.

In their shared mission to revitalize Hawaiian patterns of teaching and learning, the teachers referred regularly to all eight of these themes, often speaking or writing reflections about Hawaiian values directly as a rationale for their lessons, or justifying choices with parallels to the “old Hawaiian ways.” The pedagogical and curricular directions that HIMENI teachers explored when aligned with these eight themes were coherent with conceptions of Hawaiian education as identified by HIMENI teachers in an earlier phenomenological analysis (Johnson, 2007). Strong agreement could be seen in the presence of the eight themes across the three groups of teachers and also among teachers who were not ethnically or culturally Hawaiian. This coherence may have been due to shared vocabulary that was developed within each group and diffused across group boundaries into learning ecologies, but also likely is that there were structuring cultural narratives that allowed these eight elements to function as a theory of action for the HIMENI teachers.

Encouraging wider recognition of theory as a fundamental aspect of indigenous culture, critical indigenous education scholar Bryan Brayboy explains that
the embedded role of theory in the lifeways, practices and stories of indigenous communities is often misunderstood by those whose cultures don’t practice “telling stories”\(^{29}\) in a similar way. Brayboy (2005, p. 427) points to how, in indigenous contexts, “theory is not simply an abstract thought or idea that explains overarching structures of societies and communities; theories, through stories and other media, are roadmaps for our communities and reminders of our individual responsibilities to the survival of our communities.” The HIMENI teachers were engaging in their own theory-building and testing activity as they used cultural values and the narratives of one another’s experiences to reason about their professional practice\(^{2}\).

In the following section, I introduce the visual image of a wa’a, based on the HIMENI teachers’ own metaphor, to illustrate my perception of the relationships between the eight themes as a conceptual framework. This image is my way of telling a “story” to help make the teachers’ theory visible to those who may not share their way of seeing. Before launching into the descriptions of each theme that form the bulk of this chapter, let us step back and look at the relationships between the eight themes as a whole.

**Emergent themes as the teachers’ conceptual framework**

Ka‘ōiwi wrote that she conceives of her fellow HIMENI teachers as collectively being “steersmen for the canoe.” As she envisions it, the teacher-navigator has the responsibility of wayfinding for the canoe of the HIMENI movement, steering the Hawaiian people into the future ea (self-determination or

\(^{29}\) Keith Basso’s 1996 book “Wisdom Sits in Places: Language and Landscape Among the Western Apache,” reveals how story functions as theory that organizes behavior, as well as place and history within one indigenous community.
freedom to practice culture) and bringing along the youngest generation. Kaʻōiwi was one of many HIMENI teachers who evoked this persistent metaphor.

To provide some explanation of why the HIMENI teachers may have found so much power in the metaphor of the waʻa, perhaps some additional information about celestial navigation as practiced by many Polynesian groups will be helpful. Unlike many sailing traditions that use compasses and longitudinal points, Hawaiian voyaging is a navigational system of “dead reckoning.”

The navigator knows where he is and where he wants to go, and keeps track of speed and direction along the way. To help him keep track, the navigator has a reference course in his mind and mentally plots the course traveled along it...If the canoe goes off this reference course, the navigator must get the canoe back on it. To keep track of the course traveled, the navigator must stay awake most of the time, even on a voyage from Hawaiʻi to Tahiti that can take 30 or more days.

Wayfinding is a continuous orientation, using all available clues all the time. Nature provides the clues, and the wayfinder integrates them into [the] sense of where he has been, where he is, and where he is going. (Kyselka, 1994, p. 35)

The central task of the navigator then, is vigilance. Constant attention to changing conditions, and perpetual awareness focused on precision and excellence are the qualities that may assure survival on a voyage; they are also qualities of an excellent teacher in the Hawaiian worldview.

The HIMENI teachers have a clear picture of their destination: ea, a state of self-determination. Generations past have walked many paths toward ea: democratic action, as in the Kūʻē Anti-Annexation Petitions, (Silva, 2004), peaceful marches and

---

30 For additional description, see Edwin Hutchins’ 1983 and 1986 papers on the Micronesian system of navigation through dead reckoning; no extensive description like Hutchins’ is available for the Hawaiian system, but many aspects are similar.
demonstrations (Trask, 2001), resistance and civil disobedience (Na Maka o ka ‘Āina, 1985; Protect Kahoʻolawe ʻOhana, 1992; Pele Defense Fund, 1989), as well as legal action (c.f. U.S. Supreme Court case regarding ceded lands in 2009, and the ongoing court battles to stop construction of new telescopes on the sacred summit of Mauna Kea). The HIMENI teachers are fulfilling their kuleana (responsibility) to future generations by working to pursue that state of ea, by making education pono.

In the metaphor of the waʻa, as the movement progresses along the ocean’s surface, and the HIMENI teachers act with pono (right balance) every step of the way, the HIMENI teachers create a system of education in which learning and teaching become fully integrated with community life; they navigate with vigilance to reach their destination of ea.

Waʻa HIMENI: Teachers’ Conceptual Framework

Figure 3. Visual metaphor describing the relationship between eight emergent themes and ea, the goal of the HIMENI movement.
Illustrated in Figure 3, is a waʻa (Hawaiian voyaging canoe) as it sails to its “destination” of community self-determination in learning, schooling and living. Six paddles, represent the strengths that the hoe waʻa (canoe paddlers— in this case, the community of HIMENI educators including teachers) are using to propel the canoe as they make progress toward their destination. The six themes represented as the paddles (LAULIMA, LAWENA, NAʻAU, NALU, MAKAWALU, MAKĂʻALA) are principles of action which, if wielded well by the navigators, will help them reach their destination. The peʻa (sail) represents HANA (activity, learning by doing) as a second form of propulsion that converts the force of the wind into forward motion. Changing conditions in the weather (e.g. the local learning ecology and the broader context of the movement) may affect the ability of the waʻa to focus its power, but through skillful manipulation of the peʻa (sail) of HANA (learning by doing), the navigator can still enable progress. The oceangoing pathway is represented as PONO, a moment-to-moment balance of optimal, ethical choices that the teacher-navigators make individually and collectively as they steer the canoe ahead toward the destination of EA. If everything along the journey is conducted in a PONO fashion, then the result of the journey is sure to be PONO as well.

While it must be understood that the teachers’ conceptual framework represented here is complete unto itself, this is the point at which some sort of Rosetta stone is needed to help readers orient themselves to the connections between the themes and the literature that will be discussed in greater detail as part of the coming subsections. Each of the themes can be related to many constructs from sociocultural theory and the learning sciences, but the central parallels are indicated in Figure 4.
### Themes Seen in Teacher Practice

<table>
<thead>
<tr>
<th>Themes Seen in Teacher Practice</th>
<th>Research-Based Constructs From Learning Science</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PONO</strong></td>
<td>Ecological View of Action/Embodied Cognition</td>
</tr>
<tr>
<td><strong>HANA</strong></td>
<td>In the settings of life, watch what people do to understand what they value, what they know and how they learn; learning about what matters in a particular context is ongoing, and always from an embodied point of view.</td>
</tr>
<tr>
<td><strong>LAWENA</strong></td>
<td>Communities of Practice</td>
</tr>
<tr>
<td><strong>LAULIMA</strong></td>
<td>Knowledge is held within groups; by participating in shared practices of the group, individuals and groups expand their repertoires of practice and move from periphery to center.</td>
</tr>
<tr>
<td><strong>NALU</strong></td>
<td>Adaptive Expertise</td>
</tr>
<tr>
<td><strong>NAʻAU</strong></td>
<td>View of the world as dynamic and complex, seeing routines as insufficient; acknowledging to self when one doesn’t know and responding with curiosity to phenomena that don’t fit mental models; allowing action to inspire new thinking, novel directions.</td>
</tr>
<tr>
<td><strong>MAKAWALU</strong></td>
<td>Design Process Thinking</td>
</tr>
<tr>
<td><strong>MAKAʻALA</strong></td>
<td>Process of needfinding/patternfinding in an ill-structured domain, anticipating and prototyping solutions, testing the prototyped design and iteratively using that data to improve outcomes or reframe the need/problem.</td>
</tr>
</tbody>
</table>

**Figure 4.** Parallels noted between themes in teachers’ conceptual framework and constructs from the learning sciences.

### Eight Emergent Themes

Each of the eight themes discussed in this chapter is first defined generally, as a Hawaiian cultural value, and most are then described in relationship to an ‘Ōlelo Noʻeau (Hawaiian proverb) that provides context. Three aspects specific to how the HIMENI teachers used each Hawaiian value are then presented. In most cases, the teachers’ emergent themes revealed many more than three aspects; discussed here are the three most foundational aspects relevant to HIMENI teacher interpretation of each theme. Some discussion follows the introduction of each theme to illustrate existing parallels between that theme (as the teachers used it in their conceptual framework),
and academic constructs from the learning sciences. Some of the parallels are more tightly coupled than others; at least one of the themes (naʻau) seems to have no true parallel in academic thinking as its claims challenge the foundations of positivist epistemology.

It is important to note here that the HIMENI teachers intend no explicit or perceived connection between their themes and the academic constructs. The parallels drawn are not meant to suggest any tangible link, or reinforce “credibility” since the indigenous knowledge system is already demonstrated to be ecologically valid and thoroughly credible. Parallels are noted to provide a frame of reference for the reader who may be more familiar with that research base, and to extend existing thinking by making similarities and noteworthy contrasts more visible.
PONO

The word *pono* is perhaps the most frequently invoked word in the Hawaiian world after the famous “*aloha.*” *Pono* indicates a state of being that actively seeks a balance between conditions and actions; a balance that is optimal for each moment as situated in the conditions of a time and place. Nineteenth-century Hawaiian historian Davida Malo (1996, p. 187) describes *pono* with pages of lists of about what *pono* is not: not self-serving, not impatient, not irresponsible etc. *Pono* is essentially a way of living— a way of living that is just, equitable, righteous and responsive to ever-changing circumstances.

Contemporary philosopher George Kanahele defines *pono* figuratively, saying that “in its generic sense, it means goodness, or the sum total of human virtues” (p. 40). An *aliʻi* (chiefly leader) like the famous chief ʻUmi a Līloa who was renowned for his *pono* actions, possessed that precious type of expertise:

Knowing what one can and should do, and then doing it with competence—commanded such high regard in traditional Hawaiʻi that leadership and expertise were nearly synonymous. (Kanahele, p. 402)

Cultural historian Malcolm Nāea Chun discusses how *pono* can also be expressed diversely, from subtle disapproval or shame displayed upon hearing of acts that are not *pono*, to *pono* being reflected in a choice that is made. “Knowledge can be acquired, but…” being in the state of *pono* is ultimately revealed by “choosing to use such knowledge to make wise decisions” (Chun, 2011, p. 14).

On the occasion of the restoration of Hawaiʻi’s independence after a coup by the British, the powerful *aliʻi* Kamehameha (also known for his *pono*) spoke the following proverb (ʻ*Ōlelo Noʻeau*) that was passed down in history and now serves as
the Hawai‘i state motto:

\[ Ua mau ke ea o ka ʻāina i ka pono. \]
The life of the land is perpetuated in righteousness.

#2829 (Puku‘i, 1983, p. 310)

In other words, the \( ea \) (self-determination) of the land and its people is sustained through \( pono \). Kamehameha is describing \( pono \) as a means by which \( ea \) may be achieved.\(^{31}\)

<table>
<thead>
<tr>
<th>HIMENI teachers’ use of PONO as a theme included:</th>
</tr>
</thead>
<tbody>
<tr>
<td>PONO Aspect 1</td>
</tr>
<tr>
<td>PONO Aspect 2</td>
</tr>
<tr>
<td>PONO Aspect 3</td>
</tr>
</tbody>
</table>

**PONO Aspect 1: Dynamic balance**

The notion of dynamic balance is core to the definition of the word pono, and the notion of interdependence is corollary to that. In the context of the HIMENI schools, teachers were very consistent in making reference to the interdependent relationships that students must learn to cultivate between the three realms of life: ʻāina (land), kanaka (humanity and human things), and akua (deity and the spiritual world). In the context of a Hawaiian epistemology, what is pono is what leads to vibrant life for the land, vibrant life for the people (past, present and future), and vibrant life for the spiritual realm.

\(^{31}\) There are some respected Hawaiian kūpuna (elders) who feel that the state motto should begin with the imperative verb “E mau” (let it be that…) rather than “Ua mau” (so it is that…) because \( Ua mau \) connotes that there is already a state of pono — a phrasing that would have been quite accurate back then when Hawai‘i’s national independence was restored by the British). Since Hawai‘i’s status as an independent nation has been actively contested since 1893, it is suggested by elders that “E mau” or “Let it be that pono in the land will bring about \( ea \) (self-determination or freedom).
The HIMENI teachers instructed their students that to be *pono* is to live in a respectful way that contributes to the balance of ‘āina, akua and kanaka— a balance that respects the needs of all, across diverse contexts and realms. A simple reminder to return to a *pono* way of living could be heard in the voices of teachers who, correcting their students’ unruly behavior would often say: “time and place folks, time and place!” The students themselves had the ability to discern what was *pono* in that situation and what was not; the teachers merely called upon them to remember.

The situation of the HIMENI teachers is not such a straightforward negotiation. What is the *pono* way to conduct language instruction when there are three languages in your community— one being the everyday language of the people, one the language of the state tests, and one an endangered language that is diminishing with the passing of every elder? Navigating such policies and the related instructional decisions in ways that are *pono* is one of the hundreds of challenges that the HIMENI teachers face on a daily basis. This aspect of the theme of PONO reminds them that, whatever dilemma or decision they face, the outcome must be decided from a place of *pono* within, and contribute to *pono*, a righteous balance, in the world surrounding.

**PONO Aspect 2: High consideration of contextual factors**

In order for HIMENI teachers to know what is *pono*, they must actively investigate and cultivate awareness of the conditions around them. If you are blind to a situation’s context, then how is it possible to make a wise decision based on the subtle, nuanced factors at play? One of the ways in which HIMENI teachers interpreted this

---

[32 Magdalene Lampert’s 2001 book *Teaching and the Problems of Teaching* illustrates how the number of decisions a teacher makes on a daily basis is easily in the hundreds if not thousands.]
aspect of PONO was through getting to know their students extensively both in and outside of the classroom; some used assessment tools for content and socio-emotional factors (like “multiple intelligences” inventories), some got to know families or participated in extracurricular activities with their students like lifeguarding. Other HIMENI teachers observed their students very carefully across school-based contexts that demanded different kinds of cognitive performance; a few developed systems such as making durable records of behavior with coded post-it notes, and looking for patterns over time.

The following example illustrates a situation in which a visiting faculty member at Kulanui Aʻo showed how responsiveness to contextual factors played a role in his interpretation of student behavior.

*Mū ka waha heahea ʻole.*
Silent is the mouth of the inhospitable.

It is considered rude not to call a welcome *(heahea)* to anyone approaching one’s home.
#2196 (Pukuʻi, 1983, p. 239)

Uncle Mākoko arrived early to meet this new group of HIMENI teacher candidates for the first time and teach a morning workshop lesson. The teachers were inside eating breakfast and didn’t hear Uncle’s vehicle approach. Uncle stood outside waiting for someone to acknowledge his arrival with a welcoming chant, but nobody showed up. Eventually he approached the door and began chanting. Aunty Alanui responded by chanting back, but once Uncle entered, it was clear that he was displeased by this breach of protocol surrounding his welcome.

The workshop continued all morning as planned, but concluded with a spontaneous lecture full of passion and fire— he told the teacher candidates that they
must step up and walk their talk; to practice what they know culturally. “The knowledge is in the practices!” he urged; “We must do the practices in order for their power and effects to be revealed to us.” He implored the teachers to do the practices so that they can be good models for others, and for the ‘ike (wisdom) to continue to flow through generations.

At the end of the lecture, he invited discussion. The HIMENI teacher candidates slowly revealed that some of them didn’t even know what cultural protocol they’d missed— even if they had seen him come up the driveway, they didn’t know what they were supposed to do, or what chant they ought to have selected in response to his oli (chant).

Uncle Mākoko listened to them. He realized that, even though their ethnicities were just as diverse, this group collectively didn’t have as much cultural background and training as the last group had. Their failure to approach him with the appropriate protocol was not out of disrespect or lazy neglect, but rather an error committed by Aunty Alanui who had been working hard on other matters and forgotten to prepare them for the protocol that the visitor would expect to start the day with.

Uncle Mākoko shifted his position. The charge of electricity in the air was diffused at last. He apologized and after some kūkūkūkā (listening and discussion) there was mihi (acknowledgement and forgiveness). Once Uncle grasped that the current context was much changed from the prior context involving different teacher candidates that he had been a part of only a few months before, the offense that had initially been perceived as grave was now released completely.

Disappointment was now transformed into a tool for teaching: not a single one
of those HIMENI teachers will ever forget how important proper welcoming is, thanks to the powerful emotions and the messages that anchor their memories of that unexpected day.

**PONO Aspect 3: Alignment between values and practices**

A third aspect of PONO pertains to the HIMENI teachers’ recognition that often, the pedagogical strategies that they felt comfortable using ended up creating interactions and power dynamics that didn’t genuinely reflect the values that they held. For example, one teaching team knew it was *pono* to help students cultivate strong interpersonal relationships with their peers, but they saw that their practice of assigning leaders to small groups did not further that aim; students who had been appointed leaders gained status in the classroom and occasionally took advantage of low status students during other class configurations. They looked for ways to handle this situation and ended up reframing their classroom organization to add many types of group formations, and do more “*aʻo aku, aʻo mai*” (peer teaching and learning) giving every student some opportunity to lead with their strengths.

Recognizing the power that practices and interactions have to reinforce relationships and worldview alike, the HIMENI teachers challenged themselves to become more aware of when their pedagogical moves dipped into “automaticity” and replicated elements from their own experiences in conventional schools. To nurture among their students the healthy patterns of relating to (and communicating with) all life that is *pono*, the teachers encourage themselves to reflect deeply on the patterns embedded in their own pedagogy.
Discussion: PONO and the Ecological Model of Action

As a theme, PONO is about right relationship as well as balance. In the words of HIMENI teacher Haʻokea:

> We have to make the relational connection. We’ve got to **become** related to our students…to find the connections we have. The places you live, the things you do. That can create connection. Relating the things in their ʻāina to the things in our ʻāina; relating through the elements, and the environment.

Haʻokea’s insight provides an example that likely extends the notions we have of the typical role of a teacher. That professional role is, from the perspective of a HIMENI teacher, not merely to structure learning experiences, but to *hoʻolauna* (introduce) the young person to the network of relations that you both share, opening the doors to active participation in the world for meaningful purposes. If we consider this theme of PONO in relationship to the ecological model of action that sees all activity as enmeshed in a grand ecosystem of microsystems, mesosystems, exosystems and macrosystems that organize activity, a parallel emerges. By making connections and understanding deeply the context in which they are working, both HIMENI teachers and students alike become informed, connected, active agents who can reflectively consider and evaluate the affordances brought by particular actions in their ecosystem at all levels. The significance of one’s individual choices to act in particular ways are linked to greater outcomes at the highest levels of the system; actions taken from a place of pono contribute to the pono of the system at large (the same is true of actions that are ponoʻole, or hewa (not pono or causing the heaviness of a wrong).

While it springs from the root of the Hawaiian intellectual tradition and is in no way related to the constructs of ecological psychology, the conception of pono
parallels an “ecological approach to cognition” in that it describes agents whose actions and decisions are inextricable from the environs and the systems of which they are a part.

*Pono* extends the “ecological approach” by compelling actors in their life worlds to become explicitly aware of the affordance networks available to them, and to calibrate their decision making on the basis of optimal benefit for all involved. (Including past present and future members of the community). In Chapter 3, the teacher candidates spoke of feeling a strong sense of *kuleana* (responsibility) that motivates their HIMENI work; perhaps this drive toward *pono* within self and within system helps them connect the impacts of their actions with their mission to work for the benefit of the whole.
From a Hawaiian perspective, in order to know something, one must first engage in doing or applying that knowledge. Having information (ʻike) is only the first stage of knowledge; understanding something deeply (ʻike) comes from engaging with it in an applied, sustained way. Wisdom (ʻike) comes only after many cycles of application and the development of awareness of one’s own knowing (Meyer, 2003, 2013). Thus hana, work, and the process of learning through doing work, plays an essential role in the development of knowledge; in order to continue to advance one’s knowledge it is necessary to continue applying that knowledge for meaningful purposes.

By relying on HANA as a principle to guide their reinterpretation of professional practice, the HIMENI teachers align themselves with the core foundation of all Hawaiian learning: that principle that valid, valuable knowledge comes only through experience. The ‘Ōlelo Noʻeau that contextualizes the theme of HANA is frequently heard and repeated among the HIMENI community:

Ma ka hana, ka ʻike.
In working one learns.
#2088 (Pukuʻi, 1983, p. 227)

Variously translated as: “it is through practice that one learns,” or “through work, understanding comes,” there is no single statement that better encapsulates the philosophy of Hawaiian learning than ma ka hana ka ʻike.
HIMENI teachers’ use of HANA as a theme included:

<table>
<thead>
<tr>
<th>HANA Aspect 1</th>
<th>Knowing-by-doing and learning-by-doing</th>
</tr>
</thead>
<tbody>
<tr>
<td>HANA Aspect 2</td>
<td>Relationships, practices, and places form contexts for hana</td>
</tr>
<tr>
<td>HANA Aspect 3</td>
<td>Knowledge is demonstrated through function, contribution, and/or fulfilling a purpose</td>
</tr>
</tbody>
</table>

**HANA Aspect 1: Knowing-by-doing and learning-by-doing**

The process of learning used by generations of Kānaka Maoli can be described by the following sequence:

1) Observation (*nānā*)
2) Listening (*hoʻolohe*)
3) Reflection (*paʻa ka waha*)
4) Doing (*hana ka lima*)
5) Questioning (*nīnau*) (Chun, 2011, p. 85-88)

Whether the learner is a novice or expert, young person or old, the order of progression is fundamentally unchanged, though there is some cross-referencing between steps. For example, when learning the delicate business of transplanting an ʻōhiʻa tree seedling, you might watch the process first several times, then *hoʻāʻo* (try), discovering that the soil in your chosen spot was much rockier than the soil selected by the expert who you were following. You would return to watching, now on the alert for any details or clues as to how the expert selected the soil and site for planting—an aspect of transplanting seedlings that you didn’t consider before, but that you became aware of through your own hands-on experience.
It is considered normal and healthy for questions to arise during the hana, but every learner is expected to skillfully use the senses to answer those questions for him/herself. The answers to questions that cannot be observed or ascertained independently are given by the expert only when s/he feels the student has shown diligence and intelligence in attaining knowledge thus far through the work of the hands and eyes. The one who has observed well, listened well and done well has learned from his own experience and has thus established relationship that allows for the explicit asking of questions. The learner is expected to “put the picture together” on his or her own, through the dual lens of observation and experience.

To learn (aʾo) in a Hawaiian way, find an expert. Watch and listen… then try (hoʾāʾo), and you will learn by doing. Hawaiian learning is orchestrated through carefully structured and scaffolded experiences that allow every person to engage at their own personal level, through action. Action allows attainment of personalized meaning through experience and relationship; from that sense of meaningful knowledge, the desire for further participation, further connection and further desire to contribute is sure to arise.

**HANA Aspect 2: Relationships, practices, and places form contexts for hana**

One afternoon when the Kulanui Aʻo group was traveling, they gathered some lauhala (leaves) and practiced preparing the leaves for weaving. Pōhina made the observation that generations of Hawaiian ancestors had practiced these same acts, in these same groves of hala trees, and it made her feel close to them. She described another impact of the experience in her journal: “The forager’s instinct is now
activated in me that will never allow another leaf to go by unexamined.” A single experience in the forest that day opened Pōhina’s eyes to be aware of something she’d never noticed before, but that she felt sure she would never be able to ignore again. Finding leaves was the explicit task, but turning on her instinct for deeper looking was Pōhina’s implicit learning that day.

Aunty Ulumau described the process of learning with her grandparents when she was just a child:

Being aware with the senses of what’s around you. When you’re in that stage [becoming aware], then they’re gonna teach you some more. Observe, copy what she’s doing, stop if she tells you to stop. Follow well, and then she’ll take you to the next level. If you do well again, then you’re going up to the next level. You’re learning how to learn; and you cannot teach unless you have learned. As an oral culture, we can never forget, so we practice what was taught to us over and over again.

Kupuna Ilei Beniamina (2010) wrote about tēnā, a learning system passed down to her as she was growing up on the Hawaiian island of Ni‘ihau. She describes tēnā as a near-invisible system in which a leader or teacher guides learners through a process characterized by:

…the acquisition of increasingly sophisticated knowledge and skills. It is based on careful observation of readiness, selecting and posing tasks within the capabilities of the haumāna [learner] as a form of integrated instruction and assessment to support and challenge them to achieve new levels of competence. (Beniamina, 2010, p. 9)

Beniamina goes on to give an example of how a woman who was on the verge of giving birth might call upon a young child (named Kilohana in her story) to go and pick the lāʻau [plant medicine] that would be needed during and after the birth:

Kilohana knows that she is counting on him to pick up all of those lāʻau. He puts up his hand and sees 5 fingers. He has memorized which lāʻau by assigning each finger a lāʻau name. The amount of each lāʻau he also keeps track of by his 5 fingers: 5 maka kowali, 5 a’a hala, 5
muʻo ʻihi, and so forth….He also knows that when he returns, tūtū is going to go through her checklist with her eye. She’ll review the lāʻau and say, “ʻAe, ʻae, ʻaʻole, ʻae, ʻaʻole” (yes, yes, no, yes, no). There is a certain quality to tūtū’s voice when you know you did something wrong….As children on Niʻihau, we were given many tasks; they were divided up among us according to ability. But everyone needed to fulfill their part to get the bigger job done. And it was shame if you didn’t do your part right, especially if you’ve been doing the same thing over and over.

The element of learning through targeted, graduated challenges is similar to Vygotsky’s zone of proximal development, but what is unique is that knowledge development always happens in the context of a relationship. Social-emotional motivations to please one’s sibling or elder combine with a sense of purpose to heal a woman and her child. All the ingredients are present to stimulate memory (risk, heightened emotion), retrieval (repetition of experience) and the substantive variability (from watching others and one’s own range of experience) that supports transfer to new settings (Barnett & Koslowski, 2002).

Drawing upon the theme of HANA as an inspiration, the HIMENI teachers are compelled to design contexts for learning that mirror contexts for life in terms of complexity, in terms of interaction, and in terms of meaning/significance.

**HANA Aspect 3: Knowledge is demonstrated through function, contribution, and/or fulfilling a purpose**

_Hō aʻe ka ʻike heʻe nalu i ka hoku o ka ʻale._
Show your knowledge of surfing on the back of a wave.
#1013 (Pukuʻi, 1983, p. 108)

---

33 Barnett & Koslowski (2002) assert that substantive variability in experience is required to support transfer to novel problems.
Another aspect of the theme HANA is that the central purpose for knowledge development is to do something purposeful or functional with the knowledge acquired by fulfilling one’s kuleana (responsibility) as a community member.

As cultural historian Mary Kawena Puku‘i tells us, “In ancient days, the age of a child was not reckoned by years as we do today, but by his physical ability to do something” (Craighill Handy & Puku‘i, 1958, p. 178). The term for a child around the age of two was “the size that enables him to carry a water bottle.” That child grew into “the size that enables him to carry two coconuts,” around age five, and then on to “the size that enables him to carry a smaller member of the family on his back” (1958, p. 178). Who a person was became intimately tied to the purpose that he could serve in relationship to the whole group. In the case of a water shortage, that two year-old’s ability to carry a water gourd without spilling had a visible impact on collective survival.

In a Hawaiian worldview, knowledge worth cultivating must also serve a function and a purpose, one that is typically fulfilled (on some level, however small), during the process of learning. As HIMENI teacher Kaleionona described it:

Without practice [hana] there is no relationship. Without the relationship there is no empathy. Without empathy there is no purpose for the knowledge— and without that purpose, there is not much of anything.

Kaleionona describes a model of key relationships in the Hawaiian way of learning, represented in Figure 5.
Figure 5. Key relationships in Hawaiian learning.

As illustrated in Figure 5, within practice and activity, one finds the genesis of relationship, empathy and meaning. HIMENI teachers are inspired by this theme to envision and enact learning experiences that are “doing experiences” involving real people, real-world meaningful impact and real-world complexity. By shaping pedagogy around practices and purposes, the HIMENI teachers engage their students in developing knowledge that is linked to communities of the past, present and future.

Discussion: HANA and Embodied Cognition

In accordance with the three aspects of HANA described above, the more a learner (and a teacher) participates in meaningful activity in rich contexts, the more s/he learns. The Hawaiian approach to teaching and learning through a focus on activity (hana) gives a vivid example of how the construct of embodied cognition actually looks “in the wild” (Hutchins & Lintern, 1995), as part of an entire cultural system of knowledge development that includes development of the practice, and the practitioner as well as the activity itself (Hutchins & Lintern, 1995, p. 372). Embodied cognition and HANA both focus on activity in their approach to learning; the two
approaches agree that knowing is an activity... “codetermined by people and environment,” (Brown et al., 1989). According to Barab & Kirshner (2001), knowing is:

distributed across the knower, that which is known, the environment in which knowing occurs, and the activity through which the learner is participating when learning or knowing occurs (p. 5).

As HIMENI teachers shift from a set of conventional schooling practices that based on cognition-in-the head models to practice-based models that reflect the understandings of distributed and embodied cognition, it seems instructive to pay close attention and nānā ka maka (observe with the eyes), to examine the new types of solutions the HIMENI teachers are generating as they address the need to shift their pedagogies and learn to teach in new ways.
Teachers drew upon LAWENA as they sought to transform their teaching practices, in their process of realigning pedagogy with cultural priorities. While LAWENA is not customarily referred to as a cultural value, there is a strong attention paid to the patterns of knowledge acquisition within the Hawaiian cultural worldview.

One of the ‘Ōlelo Noʻeau collected from the oral tradition in Kaʻū shows how the term lawe is used, saying:

_E lawe i ke aʻo a mālama, a e ‘oi mau ka naʻauao._
He who takes his teachings and applies them increases his knowledge.
#328 (Pukuʻi, 1983, p. 40)

The meaning of the proverb has a direct meaning, but can also be interpreted as a call to action: saying this to another person is calling them to take what they have learned and care for it, in order to better carry forward the wisdom.

What does it mean to lawe “acquire” and then mālama, or "take care of" one's teachings? Here, the connotation is: watch and listen well, work with the hands and apply, then be ready to pass it on to the right people at the right time with special care to ensure the long-term survival of the practice of that knowledge.

The word lawe is found in the dictionary to mean both "to take" and "to apply" which could be considered opposing ideas; however, from a Hawaiian perspective, there is no contradiction. The union of “doing and receiving” knowledge that lawe connotes is the essence of what the HIMENI teachers meant when they referred to it: the way that you receive knowledge and apply it has a great deal to do with the quality of that knowledge itself. The way that something is learned has a great deal to do with what is actually learned. In this view, a core part of learning something well is
knowing how to pass that knowledge on-- as it was taught, and in a fashion that will not imperil its accuracy or application over time. The "how" of learning has great bearing on "what" can actually be learned.

While lawe is an imperative verb, urging the subject to actively take their teachings and apply them, the active form of the verb lawena refers to the pattern of relationships and knowledge that is being imprinted or transmitted, or “taken” in every moment of learning. Similar to how adding -ing to a the word "jump" makes "jumping" actively happening now, adding "-na" or "-ana" as a suffix creates a gerund, a form of the verb that is actively engaged in the present moment. The taking in of teachings is simultaneous with the taking in of the patterns of relationship referred to here as lawena; therefore, in every situation of life, in any kind of learning, lawena is always happening.

Lawena, as with many Hawaiian words, is diversely translated depending on the context. The word can be used to describe the underpinning matrix of relations and interactions which form the pattern that gives rise to knowledge. Lawena may be translated as “acquisition” of knowledge, but it also means literally the “behavior” and “character” of how teachings are manifest in a person’s inner and outer life.

From a Hawaiian perspective, beneficial knowledge is that which is acquired through a condition of healthful (pono) relations; if knowledge is acquired through an unhealthful network of relations, the quality of the knowledge is questionable – the knowledge itself can become degraded or unwholesome for passing to the next generation. Hawaiians hold that the way in which one knows a thing is reflective of the way in which one learned it; the quality of knowledge is determined by the path of
its acquisition and the patterns of transmission that are embedded within it. LAWENA, as a theme in the HIMENI teachers’ conceptual framework, insists that knowledge is not separable from the process and behaviors through which it was acquired.

**HIMENI teachers’ use of LAWENA as a theme included:**

<table>
<thead>
<tr>
<th>LAWENA Aspect 1</th>
<th>Quality &amp; coherence of knowledge transmission</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAWENA Aspect 2</td>
<td>Appropriate selection and timely sharing of knowledge</td>
</tr>
<tr>
<td>LAWENA Aspect 3</td>
<td>Responsibility to practice, pass on and perpetuate knowledge</td>
</tr>
</tbody>
</table>

Rather than placing discussion comments only at the end, some discussion follows explanation of each one of these three aspects because the examples are more story-like in this section and require additional explication.

**LAWENA Aspect 1: Quality & coherence of knowledge transmission**

Prior to attending one of their week-long gatherings, teacher candidates were surveyed about their knowledge and interest in educational technology. Due to a number of coincidental factors, the teachers' responses weren't received back before faculty had to plan the week's curriculum; one of the usual streams of feedback that would typically feed into course instructors' planning was missing.

The teachers arrived in O'ahu for their “Digital Technology for Teaching and Learning” course; they received a project-based syllabus that scaffolded the skills they needed to do a digital storytelling project—one they could eventually do with their own students.

Once the group had gathered and completed the missed pre-assessment, it
became evident that the skill levels of the teacher candidates varied widely; some were skilled video editors, and others were only now learning how to download pictures from their digital camera. Mini-lessons on interviewing skills and editing had been planned to prepare teachers to gather the stories they needed and assemble information into video shorts. Responding to the level of need, course instructors elected to focus more on basic skill building like parts of a camera, exposure, white balance, editing photos and such. The instructors presented hands-on activities were presented, but everything took place indoors, and the “relationships” built were more with the computer, than with other people.

Having modified the plans written in the syllabus, the instructors heard rumblings of discontent from participants who had been expecting opportunities to get out in the field and do interviewing and photography. Scheduled activities were delayed again and again. A murmur of protest could be heard as teachers candidates resisted sitting behind screens for both morning and afternoon sessions. The evening of the third day, they spoke out, saying: "We would never do this to our students; they wouldn’t stand for it. Please don't do this to us."

Out of frustration with how unpleasant this style of instruction felt to them, they communicated their expectations that a "project-based learning" course ought to bring them outside—out into the environment where relationship-building could take place through the elements and the land, as well as through interactions with community members in the field.

"We need to learn in the same ways we're expected to teach," was their message, which initially did not sound like a radical proposition; seen in relation to
modern methods of current teacher education, their views offer a profound critique of status quo.

This notion that the process of transmitting and developing knowledge with faithfulness to the patterns in which they are meant to be learned and passed on is fundamentally Hawaiian. Several ‘Ōlelo No‘eau proverbs refer to this pattern of knowledge transmission, including:

_Ka ‘ike a ka makua, he hei na ke keiki._
The knowledge of the parent is [unconsciously] absorbed by the child.
#1397 (Puku‘i, 1983, p. 151)

_Ku i ka māna._
Like the one from whom he received what he learned.
Said of a child who behaves like those who reared him. _Māna_ is food masticated by an elder and conveyed to the mouth of a small child. The _haumāna_ (pupil) receives knowledge from the mouth of his teacher.
#1875 (Puku‘i, 1983, p. 202)

Both of these ‘Ōlelo No‘eau point toward the culturally-based expectation that knowledge of the teacher/parent must be carefully prepared and delivered to the learner/child in a manner that allows it to be easily absorbed and integrated through the sensory faculties of the body (eyes/hands/gut). While these guiding proverbs may not have been explicitly invoked, the teachers recognized a discrepancy between how things felt to them, and the way that Hawaiian learning ought to feel. By daring to address it with the instructors, the most vocal members brought it to the attention of the entire community.

The teacher candidates’ insistence that it was possible for there to be a greater alignment between the methods of Hawaiian education and their experience of this course pushed the guest instructors to work harder to align with the as-yet unarticulated elements of project-based learning. In this context, project-based
learning had to become "place-based learning" which required field/community interaction. The instructors called upon a community member who took them out into the field and taught her views on cultural photography, encouraging them to really be with and “see” the subjects of their pictures before snapping anything. Each afternoon, time was spent outside the classroom, and that data was brought back to feed into the next morning’s workshop. The final product assignment was modified to include three levels and focuses that all told stories digitally; this allowed some to prepare their digital stories through captioned slideshow software, others to focus on the craft of interviewing, and those who were experienced with editing to create their own video shorts.

By actively aligning with the now-articulated elements of community and field experience that the HIMENI teachers saw as essential for Hawaiian place-based learning, the course became satisfying to the teacher candidates. From that point forward, incorporating ʻāina and relationship-building was an essential, explicit requirement for all guest instructors and also for all of the teacher candidates who took this insight back to their teaching contexts in various schools.

The power of LAWENA to inhibit or to inspire learning had now moved from the level of tacit awareness to explicit awareness; it could now be targeted as a goal in teachers' pedagogy. Just as it had been fundamental to their own sense of learning satisfaction during that week, they saw that attending to creating an authentically Hawaiian pattern of knowledge transmission would be deeply resonant with their students' experience, and support their learning.

It was from a place of intuition and emotion that the teacher candidates spoke
up about the missing elements from the week’s curriculum; those feelings were acknowledged and interpreted as new guidelines that were made explicit in the structure of all courses from that point forward. The teacher candidates carried that newly-articulated aspect of LAWENA back to their teaching contexts as a conscious feature of what they aimed to do.

Their attention to this aspect of LAWENA as an experientially-sound principle was not purely intellectual; they needed learning to “feel right” to them, just as they sought their instruction to “feel right” to their students by reflecting an underlying pattern of relationship and engagement with the realms of akua, ʻāina and kanaka (spirit, earth and humanity). This insight emerged from their personal experiences of discrepancy between desired learning and delivered learning; they successfully converted it into a shared referent that they drew upon. This discovery of the power of LAWENA generated a new concept for their pedagogical vocabulary (though it was never labeled as “lawena”— a concept that came from experience and reflected an advancing understanding of the nuances of Hawaiian place-based learning. They now had a way to point toward its valued elements even though they hadn’t had a clear picture of what was “missing” in their experience before the dissent. Together, the HIMENI teachers contributed to the creation of their own community of practice, not only through the construction of shared vocabulary, but also through the relationships built with place, community, and one another. Within this community of practice, teacher candidates were now more alert to the power of instructional strategies to silently contradict or sustain the pattern of knowledge transmission that is aligned with a Hawaiian perspective and Kanaka Maoli practice.
Discussion: LAWENA Aspect 1

This example reveals how important it was, in HIMENI teacher interpretation, that knowledge be transmitted in a fashion that was coherent with the content and essence of the knowledge itself. One purpose behind this cultural logic is that the quality and precision of the knowledge itself needs to be maintained over time, location and generation.

Another way of seeing this is that the pattern set in the moment of acquisition of knowledge must set the novice on a path toward mastery. Simple "delivery" of knowledge rather than culturally coherent knowledge transmission runs the risk of misleading the novice in a fashion that would inhibit future learning for mastery.

By making a distinction between knowledge delivery for expedience, and a more thorough process of knowledge development within a matrix of meanings, Hawaiian culture assures that learners embark upon a path that eventually allows knowledge to be applied in an adaptive fashion and taught again, to the next generation, in a way that promotes learning and application that is adaptive.

This parallels the research-based finding that learning experiences can be constructed to set learners either on a path toward routine expertise or adaptive expertise; advancement in one area doesn’t lead to similar proficiency on the other trajectory and may in fact, inhibit it. This aspect of LAWENA insists that new knowledge must be gained through application within the contexts of life and its relationship. It is meant to ensure that knowledge will be carried forward in a fashion that allows for application, adaptation, and faithfulness to core values-- as well as the continued capacity for survival across generations (ʻāina/akua/kanaka).
LAWENA Aspect 2: Precisely-timed sharing of appropriate knowledge to fit learner level

In ancient Hawai‘i, the relationship that the loea (expert) built with the haumāna (learner) determined whether knowledge would be shared and which knowledge was most appropriate for that particular learner to receive at any given time. Knowledge was shared only in the context of relationship. Metaphorically, the relationship provided the “container” for that knowledge to be passed on, determining the shape that it would take. If the haumāna was 'eleu (ready), showing dedication and pono, then the relationship between expert and learner could develop through time. The kumu (source; teacher) would gain an understanding of who this haumāna was, what his or her kuleana (responsibility; mission) was to be in the world, and facilitate lessons that were specifically in accordance with those hō‘ailona (signs).

At the course meeting on “Hawaiian Ways of Knowing and Learning,” Uluwehi, a science teacher with deep Kaua‘i roots told us the story of how she had recently approached a group of kūpuna (elders) in the community who were lawai‘a (fishermen/fishers). Since she was a wa‘a (canoe) person and was ma‘a (accustomed) to the ocean, occasionally she had heard mention of fishing practices related to the pūko‘a, a coral reef area with special significance for the lawai‘a. Being a science teacher at Wailana Cultural Academy, Uluwehi wondered if some of those lawai‘a might be willing to come to the school and share a little bit about the traditions around the pūko‘a. They told her they would be willing to come to the school and share about things like making net, or teach throwing net, but that they couldn’t teach about the pūko‘a. Uluwehi asked why, knowing that many of the kids were familiar with the
customs of fishing from the shore, but were really curious what their uncles and 
fathers did when they went further out in the sea. The lawaiʻa explained to Uluwehi 
that the traditions of the pūkoʻa were kapu (set aside or forbidden) and couldnʻt just be 
talked about with anyone. For them, a person would have to keep showing up over the 
course of years and earn their trust as someone who could be relied upon to assist and 
follow their guidance. They explained that the traditions of the pūkoʻa couldnʻt even 
be mentioned to people outside their circle because it was a matter of food security. If 
someone who was not pono (ethically balanced) should learn when certain fish were 
running, then they would have the power to decimate the population of that fish, 
threatening the speciesʻ ability to renew itself as a food source for the community. For 
reasons like this, as well as others that are kapu (sacred; not open to all), the 
knowledge of the pūkoʻa was not appropriate for the setting of the classroom.

Uluwehi knew that among this group, the lawaiʻa were not currently teaching 
any haumāna; she inquired about what they thought would become of their tradition. 
How would the knowledge of the pūkoʻa be carried on to the next generation? The 
kūpuna explained that, yes, it was sad, but it wouldnʻt be right for them to pass it on 
unless the right students had come to them to carry it forward: haumāna who were 
fully dedicated to learning and following the tradition. One of the kūpuna (who had 
come to Kauaʻi from Kaʻū when she married) expressed that “we grew up in a 
different world, where catching fish and knowing the fishing traditions was just a part 
of what we did everyday; itʻs nothing special to these kids today, like how it was for 
us. They donʻt even know what theyʻre missing; they donʻt know how much fun we 
had!” She expressed her faith that “someday the young people will see the importance,
and they will learn for themselves what they need to know.” The uncles who were from the area all agreed that there were lots of good things they could teach about fishing, but they couldn’t teach Uluwehi’s students about the pūko’a unless the ‘ōpio (youth) came seeking more on their own. Keeping this tradition was so important to them that they would honor it, even if it meant that the knowledge of the pūko’a would die with them.

When Uluwehi shared this story, it started off a charged discussion among the HIMENI teachers who found this a particularly relevant question: Is it better to let a knowledge tradition dwindle and die if the only alternative is to pass it on in a diminished fashion? Several of the teacher candidates had emotional reactions to this question because they recognized just such a dilemma within their own practice as teachers in an era of mandatory schooling. Some of them carried the sense that, if judged by the ancestors, the exposure they were giving their students to cultural things would not correctly follow the rules of passing ‘ike (information or knowledge) only to those who sought it and had the foundation to receive it. Haku spoke up about his feeling that what he is doing as a teacher is insufficient, he’s not able to make sure that the relationships are right for each step along the way. He knows it’s not true to what he’s been taught, but what else can he do; in a school system like that of today, this will always be a tension: the basic outcome is that every student learn the same thing at the same level [of proficiency].

Kaleionaona expressed regret about so many traditions being lost, but also pointed out that:

There is a reason that our kūpuna did things the way that they did. We cannot know the wisdom in why they did that. Of course it seems that what we have now is just a remnant of what was flourishing before. But
I know it is the right remnant; it is what we are meant to have. And mahalo ke akua for that! Mahalo that we are here together, ready to turn our hands to the earth, to begin again by learning about the entire cosmos through our ōina, and coming to know its complex beauty, archetypal forces and abundant gifts.

Discussion: LAWENA Aspect 2

This example helps us to comprehend the importance of the aspect of LAWENA that insists knowledge should only be transmitted to the right people at the right time in their development.

Within the example that Uluwehi gives of the old lawaiʻa who know the pūkoʻa, several questions were raised for HIMENI teachers that continued as subjects of discussion and sustained dilemmas. They wondered about questions like these:

How do we develop relationships with students that allow us to know which knowledge is right for them, or when the student is ready to learn a particular lesson?

How can we be sure that we convey only knowledge which is noa (free) and meant to be shared?

How can we adjust and adapt to the modern expectation that every student should learn the same thing?

How do we select curricular foci that allow us to differentiate instructional strategies as well as deeper meanings for those who are ready to grasp them?

What does it mean that, even as we work to help every learner reach a similar level of development, we have a kuleana to help every student find their “giftedness” and pursue it?

Though the HIMENI teachers had no aims to forsake modernity or return to the pre-contact model of community-embedded education, they wanted strongly to be faithful to the patterns of knowledge acquisition even as they reinterpret the principles of old in the settings of today. By continuously drawing upon LAWENA as a principle
they sought to practice, the HIMENI teachers clarified that they saw the enduring value of this tradition— even as they were challenged constantly by dilemmas and debate surrounding its implementation.

While there are overt parallels to Vygotsky’s concept of the zone of proximal development (Vygotsky, 1978), more important perhaps for the meaning of second aspect of LAWENA, is its call for sustained relationship to play a central part in defining the appropriateness of knowledge transmission and its terms. This is in many ways similar to the notion of apprenticeship or induction into a community of practice as it has been described in literature (Lave, 2011; Lave & Wenger, 1991, 2002).

At first glance, the Hawaiian learning philosophy of “nānā ka maka… hana ka lima” (observe with the eyes, work with the hands) suggests communities of practice in which the inexperienced rely on observation and progressively increasing peripheral participation. While this is true, there are specific rules of engagement for knowledge transmission that are less immediately apparent— rules that describe the kinds of relationship that must be in place before certain types of knowledge can be transmitted or made visible to an observer.

Due to this aspect of LAWENA, the Hawaiian ways of passing down knowledge are somewhat unique, whether the community of practice is highly visible (like a hālau hula with members who dance hula together) or more hidden— like the community surrounding the practices the lawaiʻa (fishers) conducted privately to maintain balanced relationships through the pūkoʻa. Within this framework, all knowledge is not accessible to all people at all times (even though it is often clearly visible to those who have been taught read its signs). A type of “professional vision”
(Goodwin, 1994) must be developed by the initiated learner—one that shows the learner how to participate in building the knowledge at hand, and that also helps them register and internalize the network of meaning signaling when to share and when not to share that same knowledge in the decades to come.

The practice of interpreting this aspect of LAWENA and applying it is a complex, relationship-based and contextually-signaled dance, one that HIMENI teachers must recognize and learn over time. The fact that they universally seek to take the appropriateness and fit of knowledge into account, even though they often feel they are missing the mark in its interpretation, speaks to its compelling power as a part of their conceptual framework.

**LAWENA Aspect 3: Responsibility to practice, pass on and perpetuate knowledge**

Several of the teachers at Kamakani School shared the challenge that they faced when, after over four years of teaching the same projects in outdoor locations at special places, the school board made a decision to shift everybody’s teaching placements. No Child Left Behind now\(^\text{34}\) required that a certified teacher be present as the “teacher of record” for every project, and it appeared to some that making these shifts was the only way to remain viable as a school. One of the two teachers who had taught the ocean-side *Loko l'a* fishpond restoration project was now assigned to go

\(^{34}\) The Elementary and Secondary Education Act of 2001 (ESEA) was commonly known as the “No Child Left Behind” Act or “NCLB.” Its provisions required mandatory testing, meeting benchmarks for annual yearly progress (AYP) on test scores at each grade level, and higher standards for teacher qualifications. One of its effects was to greatly increase the involvement of the Federal government at the local level of schooling. NCLB put pressure on staff and students to avoid federal controls like “reconstitution” or “restructuring,” the consequences of being labeled as a “failing” schools who didn’t reach AYP for two or more consecutive years.
join the Lo‘i Kalo food-and-farm project based at a stream high up in the mountains. Hoapili, a teacher who had been a part of the Wa‘a canoe project would now become leader of the Hula planting project; the alaka‘i (leader) of the Hula project was needed in the Ko‘ako‘a coral reef project because of her science degree.

When the School Board announced the decision to transfer staff, there was a great uproar among teachers across all projects, as well as from the parents and students who expected stability within the projects across the three year “looping” curriculum cycle. Petitions were written from various stakeholders to the school board and significant protest was raised, but the decision was fixed.

Hoapili had been the Wa‘a teacher at Kamakani for six years, even before they began the Wa‘a project. To be in compliance with new federal requirements, the School Board felt that moving the existing Hula teacher was their only option. Hoapili was stunned; it felt as if his years of contribution to the school and his domain specific knowledge of wa‘a traditions were completely unrecognized and unvalued— just going out the window. Hoapili expressed to his colleagues that the School Board’s decision made him feel as if they were forgetting to acknowledge a fundamental aspect of LAWENA: that he himself had a kuleana (responsibility or privilege) to continue passing on the wa‘a knowledge that had brought him to connect with the school in the first place. Yes, he was a teacher, and yes, he had some cultural experience with hula, but how was he to pick up where the previous project alaka‘i had left off? A kāko‘o (co-teacher, educational assistant or support staff) who had been part of the project previously would stay on, but Hoapili’s role was to be the new leader. The place-based curriculum underway was focused on cultivating native forest
plants (including those of hula deity Laka and other akua (deities), studying moʻolelo (stories) that helped students understand the properties and significance of the plants, learning hula, oli and mele (dance, chant and song), as well as practicing hula traditions. One of those traditions was the keeping of a kuahu, an altar of hula. Hoapili knew enough to know that the woman who had built this altar as part of her teaching cultural practice had an obligation to care for it for the rest of her life; she was a loea (expert). Was it culturally appropriate to step in and try to make decisions about cultivation of the native plants that would be grown and offered there? Who was he to determine which symbolic plants would be placed on the kuahu daily as a means of communication with the students in the Hula project group?
The issue was multilayered; in the context of place-based education, displacing teachers from the places where their knowledge was embedded was problematic enough on its own. The Kamakani teachers who had been “shuffled” would all have to reinterpret their domain knowledge of “mathematics” or “marine biology” in light of their new setting. Building new relationships, learning new nuances of place, and creating new networks of meaning in which information could be shared were all professional tasks these teachers had to begin anew as they adjusted to novel places, communities and curricula. They did this while continuing the reciprocal relationships established in their earlier teaching contexts. Several of them, like Hoapili, were also culturally obligated to carry the *kuleana* of cultural practices they had made commitments to learn and perpetuate. Discussing this issue, Aunty Iwi reasoned that because Hoapili has “been to those levels culturally, he can’t do cultural things casually; he has to take them seriously. He’s made a lifetime commitment to serve,” but his commitment was to *wa’a*, not *hula*.

As he sought to navigate this situation for the benefit of all, Hoapili found himself pulled between his relationships with his *haumāna wa’a* (students of canoe traditions), his allegiance to the mission of the school, his family (who had even less time with him now) and his *kuleana* to the *wa’a* itself as a *ho‘okele* (navigator). Hoapili tried to work with the changes, using various configurations of switching, bringing in community members and attempting to keep the *hula* teacher involved with her former students and plants, but the dilemma was never resolved to anyone’s satisfaction. Hoapili knew that, after his ‘*ohana* (family), his primary responsibility was to honor the *wa’a* traditions that he carried within him; in time he left the school.
Discussion: LAWENA Aspect 3

This example illustrates Hoapili’s dilemma, and it points toward the gravity with which the kuleana of cultural perpetuation is treated. Hoapili did not seek to earn his teaching license out of desire to become a school teacher; his motivation was rooted in the cultural imperative to share the wa’a traditions entrusted to him.

The source of Hoapili’s dilemma lay in the fact that, to Kānaka Maoli, knowing happens only in practice: a teacher cannot be expected to depart from the practice of his craft, or from the perpetuation of that craft through devising opportunities to convey it to willing haumāna (provided those avenues are available). According to Malcolm Nāea Chun, the very definition of learning includes "the idea that as one learns and one becomes skilled (mastery), knowledge and skill are to be used and shared with others..." (2011, p. 84). In order to be considered an expert in a (traditional) field of knowledge, a person must also have proficiency at transmitting that knowledge (and recognizing the types of relationships which are appropriate for knowledge transmission) so that it may continue to thrive in the youngest generations.

Along their path to becoming experts, students of Hawaiian tradition are required to develop a matrix of relationships in which new knowledge can be explored, applied, tested, progressively understood, and mastered. Relationship requires investment; the student has to keep showing up to receive and embody the information; s/he reciprocally must continue to “reinvest” it by conveying it to others in culturally appropriate ways, making judgements about the correct scenario for sharing particular knowledge with each learner.

There is a similarity here to the research-based construct of “Pedagogical
Content Knowledge,” often abbreviated as PCK (Shulman, 1986, 1987; Gess-Newsome & Lederman, 1999), and the way that PCK can only be built through teachers’ professional experience. Expert physicists may know 13 different ways to frame a problem, but the knowledge of how to help others solve that same problem (and the decision-making structure that teachers build over time) comprise a distinctive body of knowledge that goes far beyond mere communication of the procedural knowledge required. Pedagogical content knowledge and the content knowledge complexes that teachers construct through repeated and variable experience (Sherin, 2002) do represent one academic niche where the presence of this less-visible type of teaching knowledge can be seen.

In the academic world, there is certainly no moral obligation to actively teach what one knows in order to fully claim or honor that knowledge, there is however, in PCK, a recognized distinction between the bodies of knowledge required to use information versus to teach it. The Hawaiian tradition teaches both of these, interwoven seamlessly from the start of the kumu/haumāna (teacher/student) relationship.

As a principle important to HIMENI teachers, LAWENA reveals that knowledge transmission must encompass both the information learned and the pattern of relationship embedded in the knowledge that signifies and structures how it should be carried on. Since knowledge is structured for purposes of collective survival as well as communicating subtle nuances to future generations, HIMENI teachers recognize that it is vitally important for their teaching practices to be deeply reflective of this LAWENA theme in all of its aspects—so that treasured knowledge of all kinds can be
maintained through practice, with integrity, as *waiwai* (real wealth or, literally, abundant fresh water) for future generations.
**LAULIMA**

lau.lima

nvi. Cooperation, joint action; group of people working together; community food patch; to work together, cooperate. Lit., many hands (Pukuʻi & Elbert, 1957).

The denotation of *laulima* includes notions of “joint action” and “working together” toward a common goal. As a strong cultural value that became a theme visible in the HIMENI teachers’ practice, *laulima* also appears to stand as a key to further development of the teachers’ professional community. Emerging consistently in remarkably diverse ways, the teachers actively interpreted the theme of LAULIMA in their teaching contexts, recognizing the value that its practice had for them at their schools, among their students, and as a guide along their trajectory of professional growth.

ʻAʻohe hana nui ke alu ia.
No task is too big when done together by all.
#142 (Pukuʻi & Elbert, 1957, p. 18)

Working together for mutual benefit was, very simply, the Hawaiian way. The synergistic power of cooperation that is referred to in this ʻŌlelo Noʻeau (proverb) was such a fundamental Hawaiian value, referred to as *laulima* (literally, “many hands”), that it was evident at every level of ancient Hawaiian society. *Laulima* was how the work of life was best accomplished; from the management of the family system (Kanahele, 1986, p. 346), to the division of labor in society at large as Craighill Handy & Pukuʻi describe in the Kaʻū district:

The sharing and divisions of labour in all work (*laulima*)—in planting and fishing, in housebuilding and preparing feasts, in work on the irrigation ditches (ʻauwai), taro terraces (loʻi) and walls (kuāuna), on
ponds (loko) and in rituals, the hula, war—was also a way of education, for every one did his part. What one or another did was partly subject to the direction of the Ali‘i and his or her priests and supervisors (kanohiki): but largely it was determined, according to status, age and sex, in accordance with traditional custom. Even the children had their duties, according to size (1958, p. 178).

It is worth reiterating here that Hawaiians of old conceived of laulima as “way of education,” as well as a way of accomplishing tasks faster and better. Laulima was incorporated broadly as a part of the customs and traditional life, woven into the social structure so deeply that even with the damage wrought by the population decimation, banning of cultural traditions like hula, and the banning of ʻōlelo Hawai‘i itself, laulima endured as a primary strategy for accomplishment in times of need. Though many Hawaiians were dedicated to a specific practice, a lineage (as in hula) or a hana no‘eau (skilled work or artist’s craft), at some point, everyone was needed for participation in some types of shared activity. Engagement in shared action was one of the ways that many different people could experience and enjoy the many different activities of community life.

The youth of Waipā on Kaua‘i expressed their experience of the benefits of laulima during their participation in Blaich’s 2003 study of ‘āina-based education. Laulima and the collaborative forms it takes in formal school settings have long been recognized as an asset among Hawaiian learners that can be leveraged to increase learning (Au, 1980; Kana‘iaupuni, Ledward & Jensen, 2010; Kaomea, 2011; Puku‘i, Haertig & Lee, 1972; Tharp 1989; Tharp et al., 2000; Tibbetts, Kahakalau & Johnson, 2007). Recognition of the power of laulima as a Hawaiian principle also echoed strongly throughout the HIMENI teachers’ statements and practices. Even after
decades of influence by the United States where competition and individual
achievement visibly reign as dominant values, laulima continues to hold a powerful
resonance for Hawaiian learners across the generations.

As one of the eight themes in the HIMENI teachers’ conceptual framework,
LAULIMA came to represent the specific ways that teachers orchestrated working
together across geographic distances, and the ways that they leveraged their network
of “many hands” in support of both professional learning and student learning.

<table>
<thead>
<tr>
<th>HIMENI teachers’ use of LAULIMA as a theme included:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LAULIMA Aspect 1</strong></td>
</tr>
<tr>
<td><strong>LAULIMA Aspect 2</strong></td>
</tr>
<tr>
<td><strong>LAULIMA Aspect 3</strong></td>
</tr>
</tbody>
</table>

**LAULIMA Aspect 1: Value of connection and support of network**

There is a strong cultural value placed on cooperation in Hawai‘i; one of its
benefits is that by working together, things can be accomplished quickly. It is not
uncommon to hear someone invoke the following proverb as they face a challenging
task head on:

_E lauhoe mai na wa’a...pae aku i ka ʻāina._
Paddle together the canoe, and quickly the shore is reached.
Work together and we will reach the destination in the shortest time.
(Similar to Puku‘i, 1983, #327)

A week before the new school year began at Kamakani School on O‘ahu,
history teacher Kūpono learned that his teaching assignment would not be the same as
the previous year. Kūpono thought of himself as a relaxed guy who could go with the flow, but when he found out he was now responsible for language arts, he was seriously distressed. He called his friend Ha’okea who worked at a different school. Ha’okea and Kūpono had both attended the same high school on Oʻahu during different years and after meeting at Kulanui Aʻo, they began taking every opportunity to work together as a pair, zealously claiming public glory for their alma mater with every successful task completed. They got together on their own during the quarter and Ha’okea shared his poetry materials with Kūpono who came over to visit Haʻokea’s school and observe his mentor teacher for a day. She too shared some suggestions for poetry units and lesson planning. Eventually Kūpono and Ha’okea visited each other’s schools and they expressed an interest in spending more time watching one another’s mentors as well as other teachers. Learning by nānā (observation) was really important for both of these men, and it was as if a door had opened; theory-based reasoning was a challenge for Kūpono, but he could reason based on past experiences. Months later, Kūpono gave a hōʻike in ʻŌʻokala of how he’d combined his history unit with poetry using genealogy and family stories; the students had produced a high-quality book of family stories, genealogy and poetry that the students could someday share with their own children. The papahana (foundational project) had been a success, and Kūpono had brought ʻawa (powdered root of Piper methysticum, shared ritually throughout the Pacific) to drink together with everyone. Haʻokea showed Kūpono how to prepare the ʻawa, and in time Haʻokea became a fairly experienced practitioner at serving the ʻawa according to non-ceremonial protocol.
Kūpono gained access to the organizational strategies and the subject-matter knowledge that he needed and Haʻokea’s mentor had; Haʻokea gained access to cultural expertise as well as to situations over time involving other people where he could practice cultural development in a hands-on way. Reflecting on his step up to the language arts challenge, Kūpono says:

“For me this is the first time I’ve ever done this. After having gone through it one time, I can make adjustments. I can be more clear and have my expectations more clear.”

There is no question that he and the others involved have grown professionally through the collaboration. Haʻokea’s co-worker Pōhina offered that she felt that [Kulanui Aʻo] has been a really good project to make the bridge between the gaps in our schools. I feel like it is important for different school teachers in training to be putting their minds together to make the right choices. It has definitely been a tremendous experience for me and I have gained more confidence in myself and talking with others. It’s a kākou thing! [It’s a “together” thing!]

When asked specifically what it was that she appreciated about the bridging of gaps between schools and working together more closely, Pōhina expressed her sense of relief and support: “We know that we can’t get too far off of track if we do it together.”

Many of the HIMENI teachers expressed that the support and closeness benefits they receive from spending more time with collaborators is not only satisfying; it also helps them come up with better ideas and plans for instruction.³⁵

If LAULIMA is understood in part, to be the completing of one’s kuleana, then

³⁵ It may improve performance by providing multiple opportunities for corrective feedback. This perceived improvement through collaboration is also consistent with the findings Kulkarni, Dow & Klemmer’s 2012 research on the significant improvements in outcomes when rough prototypes are shared across teams before final solutions are built.
collective power grows when all are united in fulfilling their personal responsibility.

LAULIMA Aspect 2: Power of network for enhancing collaboration

One voice stood out over all the others that day after lunch. We’d been out for a huaka‘i in the morning and were coming back to get started with a workshop on literacy. Uluwehi was not afraid to be heard; she’d enjoyed the huaka‘i but wanted something more. At various points, she said:

“What we did today was great, but how do we apply this experience to our teaching?”

“We need time to put this into a curriculum.”

“We are all here. We are all taking the time away from our families. Why don’t we just do this together?”

Uluwehi wanted results, and she brought up her feelings again and again until the instructors changed the afternoon’s plan to accommodate her request. That day, the teacher candidates had the first of many opportunities for collaborative planning to come.

Hearing Uluwehi’s persistent refrain, I began to reflect on how one bias in teacher education is to put the burden for curricular innovation and community connection wholly on the shoulders of the individual teacher. Reform initiatives often call for creativity, but how many provide direct experience into forms that assist in the pursuit of curricular aims? Partnerships expect the teacher to forge and nurture the connection between the students and the community, yet the teacher often has very

---

36 This anecdote is taken directly from a set of fieldnotes and an analytical memo that I wrote; it is from my personal standpoint and reflects my interpretation.
little if any training, mentorship or solid examples to follow along the way.

Uluwehi was the first to be heard, but many voices joined her in support of the benefits they received from having time to work together on their individual curricula. A few preferred to work alone and then get feedback, but most teachers preferred dyads or small groups for discussing and then developing their papahana (unit plans) and aʻoaʻo (lesson designs).

What the teacher candidates got from the program was what they wanted: to constantly be having field experiences, and then coming back to the frame of the learning ecology and teaching context where they’d brainstorm pedagogical interpretations of that experience. Even in the field, you’d hear people reflecting on questions like: “If my kids [students] were here now, what would I want to tell them? What could we point out, what could we contribute to this place; what could we build on that we’re already doing back at home?”

Later I saw how highly the teachers valued hearing one another’s feedback and brainstorms about ways to operationalize these place-based field experiences (and the community guides) into curriculum. While it was a very brief “going around the room” to share ideas or prototype lessons, just that cursory exposure to the range of their peer’s own responses of how they might interpret an experience (to select and teach a particular concept or set of concepts) for their students consistently inspired new thinking for the teacher candidates. Again and again the teachers would say things like:

When Laʻakea talked about how she did that with her students, it got me thinking about how, in my class, the students take a different approach. We always start with...
What sounded at first like simple noticing or puzzlement (to the unfamiliar ear) seemed like a process of the teacher candidates’ un-puzzling what they know about the learning ecologies of their peers’ teaching contexts, and recalibrating that same picture based on the contextual factors in their own — in order to generate an analogy and consider a possible adaptation. Of course it wasn’t always that tidy, but I heard the narrative many times of a particular change or adaptation that was made, as inspired by a tiny detail or factor in someone else’s experience.

There was a balance created by the residential program that brought the teacher candidates into frequent close proximity to hear each others challenges, stories and solutions often, yet their daily lives were separate enough that they weren’t immersed in the same nested structure of constraints in that teacher candidates’ learning ecology. From that standpoint, the teacher candidates could listen to one another and consult about solutions from a deeply informed perspective that also had some epistemic distance from the challenges. The differences in school structure between one teacher candidate’s situation and another’s brought focus onto the specific factors at play within the network of each context.

The teachers reflected on their institutional culture and how it affects/influences, limits/expands the range of possibilities and imagined curricular improvisations that they were willing to attempt or propose. They reflected on the tendencies of their own innate persona to gravitate toward certain activities and framings; they spoke of how hearing the natural inclinations of their peers (who they respected and had come to view as “experts-in-their-own-context”) inspired and challenged them to test and expand beyond the zone of their own comfort.
LAULIMA Aspect 3: Making knowledge visible & accessible through learning by watching others practice/struggle/solve over time

Another one of the angles that the HIMENI teachers “leaned into” was the opportunity to watch one another’s hō‘ike (presentations) of how they’d applied course concepts to challenges and the solutions they were trying in each of their home teaching contexts. Every time the group met, every participant would bring evidence and present for 30-45 minutes about the latest episodes in their teaching practice. Focusing on sharing what they’d learned from their teaching context since the last cycle, the teacher candidates were able to map and follow the outcomes of solutions over time from personal and collective points of view.

While the group was rarely without a few grumbles about “how long” presentations took, during their peers’ hō‘ike, attention was rapt, and Q & A sessions with each teacher candidate presenter consistently flowed over time limits, abundant with feedback. Ideas seeded at one hō‘ike bore fruit three and four cycles down the road; it was often possible to track a pattern of diffusion as one idea was and was adopted and adapted variously in the practice of other teacher candidates who were willing to ho‘ā‘o (try something they’d seen others do).

On one rare occasion when the group was together for some informal leʻaleʻa (relaxing, fun time) at the home of a HIMENI teacher who wasn’t part of the program, our host asked, “What is it that you think would help us teachers most to get going?” The ensuing conversation lasted the better part of the evening, until well after midnight when the aunties and uncles brought out their ukulele and began to kani ka
**pila** (play and sing songs).

Several of the HIMENI teachers had tackled our host’s question by constructing a plan to host an annual conference specifically for HIMENI teachers at all types of schools. Rather than having a typical “sign up and present” type of conference, they wanted a three-day retreat where teachers could build relationships and have smaller-scale opportunities for sharing; they would meet with a small group and each share together, before shifting to another table and getting to know and share with a different group. Eventually they would work their way around the entire population of HIMENI attendees. Reasons were given for why this new format should be added as a supplement to current conferences, and threads for discussion were identified by the teacher candidates as they sat with their plates of food on the lanai (porch) watching a golden-pink sunset echo behind the mountains of Waiʻanae.

Part of what was valuable to the teacher candidates who debated and expanded this plan for the next few hours was the opportunity to connect. Almost more than anything, they wanted to be able to **see** what their colleagues were doing in the HIMENI schools. As Hoapili put it:

> This networking is really what has helped me. Getting to hear what other people are doing, how they’re handling their situations. And if I can help other people by sharing what I’m doing...[that’s great]. We are in the classroom, we are doing this and we need these ideas. At least this way we are doing it together.

They viewed one another as the most informed experts in the world because they were the ones who had experienced similar settings and struggles, yet who shared similar missions; the teacher candidates were deeply motivated to gather their peers and take the first step in Hawaiian learning: **nānā**, to observe and watch closely.
Discussion: LAULIMA and Communities of Practice

If we think about a community of practice as a group of people with a shared repertoire of practices that also shares expertise (Gutiérrez & Rogoff, 2003) and who may encounter similar problems that arise and are distributed across an environment (Nasir & Hand, 2008), the entire movement of HIMENI teachers qualifies as a community of practice. The participants in this study had many more opportunities for “shared action” than the overall group of HIMENI teachers did on an everyday basis at their schools.\(^\text{37}\)

Their participation in the Kulanui A‘o program allowed them to get more feedback and interaction, and, as this section illustrates, they found the connections they developed there beneficial in propelling the growth of their practice.\(^\text{38}\)

Typically the model for such a community of practice describes the newer, more peripheral participants expanding their repertoires of practice as they move from periphery to center--joining the experts who have been doing the practices for a longer time, and in ways that present “substantive variability.” However, the group of HIMENI teachers doesn’t quite fit this model for a community of practice because together, they are attempting to do something about which there is no “prior knowledge,” or known expert; only analogies from other experiences of teaching and learning in a Hawaiian way. This community is actively creating the center (i.e.

---

\(^{37}\) It seems possible that these opportunities boosted the evolution of their practice, causing them to take a different trajectory or accelerate their insights. This would not be considered a possible negative effect of the study however; evidence suggests that it would be positive if there were any effect.

\(^{38}\) From the Met Life Teacher Survey Archives, quoted in the 2009 report, p. 10: “American teachers strongly support steps that would improve their working conditions by increasing collegiality and reducing isolation... Seven out of ten teachers think it would help a lot to have a formal system, such as ‘teacher centers’, where teachers can get help and ideas from other teachers and administrators.” Six in ten teachers also thought that having more structured and organized time to talk with colleagues about professional matters would help a lot to improve working conditions for teachers.
expertise in twenty-first century Hawaiian education that leads to *ea*) from many positions distributed along the periphery. Perhaps identification of the unusual dynamics in this setting and other communities of practice like it can help us to reconceptualize the notion of “community of practice” in domains where solutions are not known, and there are no “experts,” only analogies to what has come before in other indigenous cultural and educational domains. In essence, this is the situation that the field of teacher education is facing when it comes to the urgent need to adapt teacher preparation pedagogies for the rapid diversification of student demographics and technologies that provide access to new kinds of knowledge.
**NA‘AU**

*Na‘au*, meaning the gut or the viscera, is the cultural concept in the HIMENI teachers’ conceptual framework that requires the most epistemological stretching for those who are unfamiliar with the Hawaiian perspective. There is simply no clear analogue to the sense of the *na‘au* for those who do not recognize it within their own experience or worldview.

*Na‘au* is the word used for both the physical organs of the gut, as well as the feelings and sensation one perceives with that organ. Translated as intuition, the heart, and “the seat of thought, of intellect, and the affections,” (Puku‘i, Haertig & Lee, 1972; see also Puku‘i and Elbert’s 1957 definition of the word).

Just as many of us trust the sensations of our organs of smell, taste, touch, sight, and hearing to provide significant, valid information that helps us to discern worldly phenomena, so too do Hawaiians trust the sensations of the *na‘au* (gut) to provide significant, valid information about the world. We all recognize the power of the body as a sensory instrument to help us avoid danger and survive; the *na‘au* provides a stream of sensory input as part of embodied experience that, for a Hawaiian, is no less tangible or reliable than sight or hearing.

Rubellite Johnson describes the seventh sense of *na‘au* as simply a kind of intelligent consciousness, or “Awareness” (Meyer, 2003). Puku‘i explains that:

There’s a connection also between the words *na‘au* and *na‘auao*. A *na‘au* that is illuminated with light (*ao*) has *na‘auao*, wisdom, so a *na‘au* that is living and bright and enlightened, filled with light has wisdom because the *na‘au* leads you where you need to go,“ (Puku‘i, Haertig & Lee, 1972 Vol. I, p. 156).

The opposite is also true; a *na‘au* that is empty of light is called *na‘au* pō. A
person whose naʻau is pō, dark like the night, lives without light to guide him or her. Such a person is not malicious, but rather lives in ignorance and is without wisdom, as they are unable to receive it through the leading of the naʻau.

The sensation that one’s naʻau is pono is of great significance to Hawaiians. Naʻau pono signals a deep knowing from the place of naʻau that things are in balance; all of your relationships are pono. A person whose naʻau is pono is called “upright, just; right-minded” or having an “upright heart” (Pukuʻi & Elbert, 1957); naʻau pono describes the visceral feeling of right-ness when all aspects of our lives are in balance. Naʻau is clearly a central concept in the Hawaiian experience, and it relates specifically to the preferred ways of learning as well.

Aunty Alanui shared with the HIMENI teachers her perspective on the role of the naʻau in the process of learning:

This naʻau, this is our ‘brain,’ our center, our core. When we get information… it goes in our ears, our eyes, our nose, but it’s going in here [she points] to the brain. When we do something, again and again, then we can digest it; it comes down here [she points] and it becomes naʻauao (wisdom). Down here [points again].

We can recognize now a deeper meaning in the Ōlelo Noʻeau we explored earlier in the theme LAWENA:

E lawe i ke aʻo a mālama, a e ‘oi mau ka naʻauao.
He who takes his teachings and applies them increases his knowledge.
#238 (Pukuʻi, 1983, p. 40)

Though the translation is somewhat ambiguous, “‘oi mau ka naʻauao” clearly suggests an ongoing betterment, a generative growth in wisdom, not a one-time
acquisition of static information. The one who actively cares for his teachings by using them is able to “digest them” and incorporate them, thus furthering his wisdom—and developing the capacity to learn more by opening the na‘au as a vessel of light and guidance.

HIMENI teachers’ use of NA‘AU as a theme included:

<table>
<thead>
<tr>
<th>NA‘AU Aspect 1</th>
<th>Developing the “sense” of na‘au</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA‘AU Aspect 2</td>
<td>Use of the na‘au for discernment</td>
</tr>
<tr>
<td>NA‘AU Aspect 3</td>
<td>Making pa‘a in the na‘au</td>
</tr>
</tbody>
</table>

**NA‘AU Aspect 1: Developing the “sense” of na‘au**

We have been introduced to the concept that the na‘au is one of the senses available through embodied experience to those who are aware of it. This experience of sensation in the na‘au is not limited to those who participate in the Hawaiian worldview. Speakers of English often use an idiom that points to one’s “gut feeling” about something— and while the epistemological workings behind that statement may differ profoundly from what Hawaiians conceive of, the notion of feeling something in the gut is not entirely unfamiliar. To the undeveloped na‘au, that feeling may be a mere wisp of a thought, but to a person whose sense of na‘au has been developed, it can be much more.

Just as a one can be described as having a na‘au that is na‘auao, wise and

---

39 Since the 1980s, the existence of an “enteric nervous system” has become well known to biologists and neuroscientists; popular articles refer to it as the body’s “second brain.” Neurotransmitters and receptors are found throughout the tissues of the body, including the gut. These fairly recent scientific findings parallel what is also known within the Hawaiian indigenous knowledge system: that consciousness and awareness is distributed across the body, not simply in the brain.
filled with light, or a naʻau that is pō, dwelling in ignorance, so too can a person be
described as having a naʻau that is haʻahaʻa, or humble. The following ʻŌlelo Noʻeau
gives an important message about the correct use of the naʻau:

Kuʻia ka hele a ka naʻau haʻahaʻa.
Hesitant walks the humble hearted.
#1870 (Pukuʻi, 1983, p. 201)

The one whose naʻau is haʻahaʻa (and not hoʻokano, full of ego or pride) is able to
pay careful attention to what is around him or her. Such a person is able to receive
information from the surrounding environment and thus walks cautiously, in full
awareness of the dangers that surround or the sensitive aspects of the context they are
a part of.

Much in the same way that a musician “develops an ear” for fine
differentiations in pitch over years of practice, or a wine connoisseur learns to
distinguish between tastes so precisely that she can baffle the dinner guests by
describing the “leathery, oaky and jammy” flavors of the evening’s bottle, so too the
sense of the naʻau can be refined over time. Everyone may have a gut feeling upon
occasion, but how sensitive and attuned is the instrument? Senses can be developed
through practice and experience; the HIMENI teachers value the development of the
sense of naʻau within their students, just as they value it as a guide within themselves.

The range of emotions permissible in an environment that acknowledges naʻau
is also unique and provides affordances for learning. In a written reflection, Lani
wrote:

We are so deeply affected by each other. I read once that writing plays
was about supreme confidence and bravery, that the more you dug
down and shared your deepest truths and secrets, the more people will
be able to relate. However, in order to be a great playwright or poet,
you must be willing to expose the very stuff you have spent most of your life [trying] to hide and not think about… I love how project-based, place-based, Hawaiian-based education contextualizes and validates this knowledge as something necessary and normal. Sharing information, [and] not being able to control your emotions because you are that connected to the hana, is natural, necessary.

Lani is arguing for the benefits she’s experienced as a HIMENI teacher as part of a learning ecology that allows room for a broader range of professionally acceptable emotions—a managed, but unrestricted flow—that comes directly through the naʻau.

Uluwehi created a routine with her students in which she would ask them to do a “naʻau check” by going around the circle and asking each one to share how their naʻau was feeling. This gave students regular opportunities to tune in to the naʻau, and to practice transitioning from an active state, to a receptive state. Students were able to hear one another’s experiences and cultivate empathy. Issues such as small slights or bullying could be addressed without naming or blaming.

This practice appeared to me to be a kind of distributed reflection, making the inner state of the group visible to all members of the group, and allowing all members’ perspectives to feed into the next individual and collective ‘moves.’ Group norms were reinforced through the simple act of clarifying publicly when they had been transgressed.

By learning to check their own naʻau when asked, students were building foundational skills that would allow them in the future to ask themselves: “Do I feel calm, settled and ready to learn, or do I feel something is not pono and must be addressed?” Becoming aware of their own state is a first step in being able to assess their own answer to other questions that pertain to the well-being and effectiveness of the group: Is the way clear for good things to happen? Am I in a healthy, positive state
This was not just an “exercise” for students to develop executive functions and manage their own states of metacognitive awareness. The messages received from the reflections were a powerful way of connecting for students and teachers alike. After one end-of-the-year quarter in which the teacher candidates hadn’t been as present as usual for weekly conference calls, and their usual shared Makaʻala Moment Reflection Logs had slowed to a crawl, one teacher—hoping to connect—sent out an email asking “in any way possible, in a word, haiku, ramble, blog… please give me a glimpse of your end of the year feeling. Pehea kou piko?”

Knowing that the busy teachers had time for only a single question, Kaʻōiwi chose to ask: Pehea kou piko? How is your center, your core? How are you feeling in your naʻau? These were the questions that would go right to the essence and give Kaʻōiwi and all her peers the most valuable information about how to connect in a pono way with those they were missing. “Pehea kou piko?” and the naʻau check both served to make visible important information about the interplay of inner and outer contexts that has such a role in shaping the interactions within any learning ecology.

Several Kulanui Aʻo teachers were part of the staff at one HIMENI school where they had come to the consensus that one of the key goals they had for their high school graduates was students’ ability to use their naʻau for various purposes—naʻau was at the top of the list, right near “getting good test scores,” “having options for further schooling like college or local trades,” and “being good people who give back to the ʻāina and community.”

Crawford et al. (2005) tell us that awareness of one’s own knowledge states is an important factor in the development of adaptive expertise.
As seen in the practices and the priorities of HIMENI teachers, the ability to consider awareness of bodily states and emotional states through the na‘au is highly valued. Cultivating the sense of na‘au through frequent use builds wisdom and brings important data for decision making because it can inform choices/moves about what the pono action is in the world.

**NAʻAU Aspect 2: Use of the naʻau for discernment**

Just as it is the naʻau that first rumbles when there is a feeling of kaumaha (heaviness, deep sadness) or hewa (grave offense, injustice), in turn, when something feels pono, it is the naʻau that speaks up to say, “yes, this is feels right!”

Teachers’ statements about when they felt pono in their naʻau included the following excerpt from Laʻakea’s journal:

Two teachers in the forest tall with alaheʻe, gathering invasive waiwī guava sticks together with their students. A city councilwoman stops by, gives hugs and kisses, catches up on some family talk. Two teachers, a school supervisor, and two community friends stand just off the road with a wheelbarrow of machetes and shovels. Students identify and debate native species from memory, with books for backup problem solving. There are sounds of laughing, sanding, then a crash as the kids safely bring down a big guava tree with their saws at last. They are solving a community problem by creating a “tsunami escape zone.” They will sell the guava sticks after shaping them into massage tools. In this moment, we are all satisfied, purposeful, connected, and it feels good. It is pono.

When asked in an interview to describe a particular time during teaching when they felt pono in their naʻau, the teachers responded as follows.

Lauloa: I don’t have one particular time but every time we were outdoors it felt pono. Maybe that’s why I didn’t care too much for that one class because we were always inside.

Lani: So many! Mostly when we’re outside and we don’t hear foreign noises like rustling of papers and moving of chairs. Anytime we were outside I was being a part of something that was ancient and real.
La‘akea: Our trip to ʻŌʻokala when we went into the forest. It was very educational because we learned to identify plants. We learned a skill on how to survey a forest using low technology to find out what percentage of native plants and invasive species were in the area.

Hoapili: At Kawaihae, with the ‘Ohana Wa’a. When I saw the results of teaching in the Hawaiian way… it made me think of how I would want to teach.

If adults can sense what is pono with such clarity using the naʻau, might not some students feel it as well — perhaps even more so? These teachers all mentioned feeling pono when they were teaching and learning in the environment, subject to the natural elements.

Something about naʻau has to do with listening. In the words of Aunty Iwi, naʻau is “The knowledge of your kūpuna (ancestors). When in doubt, listen more. Our naʻau reflects the intelligence of our kūpuna.”

Advising her peers in a formal presentation about what HIMENI teachers should do when they feel resistance and sense themselves dropping back into the “regular” ways of teaching, Pōhina gave these instructions based on tradition and personal experience:

If you’re feeling resistance. Put your stuff down, go outside, and go make a lei. Do your protocols and gather your materials. Clear a space for yourself and make a lei.

What Pōhina was suggesting to her peers was that by going outdoors, interacting with the elements and encountering the intelligence within the ʻāina and plants of the lei (garland or wreath made of leaves and flowers), one can receive new inputs through the naʻau. The directive given by Pōhina to break through blockages within ones’ own
thinking encouraged them to use a Hawaiian ritual technology\(^{41}\) that activates the intelligence of the naʻau and creates receptivity. To transcend one’s own limits, Pōhina was urging her fellow HIMENI teachers to “go make a lei” as a way of focusing to achieve a state of awareness, receptivity, connection and listening through the naʻau.

Entering into this state while outdoors and in the elements is particularly salient when a cultural worldview has primed the teacher/learner to engage with every aspect of nature as animate; everything has awareness, consciousness and carries the potential to communicate directly or symbolically. Pōhina directed her advice specifically to teachers who were struggling to transition into teaching from a Hawaiian perspective: even those who were not yet familiar with a Hawaiian worldview could receive practical benefit from professional reflection in that receptive state—mū ka waha—silence yields the benefits that come from listening.

HIMENI teacher Laʻakea was one of those who did not come from a Hawaiian background but she had a very well developed sense of naʻau and used it for discernment in her teaching practice. In her role as a garden teacher, she was able to impact a group of students profoundly by encouraging them to develop their connections through the naʻau:

My vision is to have students grow crops so they can sustain themselves. I want to create a place for myself and my students where the child has a relationship to the soil and plants and their knowledge will come from touch, smell and taste to solve problems. They can always use science to do the same thing but they should not forget to use their intuition— which is what indigenous education is about.

---

\(^{41}\) The word technology is used here in the original Greek sense (tekhnologiā) to describe the “systematic treatment of an art or craft” (American Heritage Dictionary, 2013).
La’akea taught garden courses for many students and over the course of her first year teaching, created an impressive garden in an area that struggled with pests and rocky soils. Using her skills in learning-by-doing along with na’au, she solved garden challenges expertly.

One of the groups that came to La’akea that year was a class of fourteen autistic students; many were nonverbal, a few had full-time aides because of unpredictable or self-injury behavior. Though she had no experience with teaching students with special needs students, La’akea used her na’au in order to find ways to connect through the sensory faculties of the students, such as creating a bucket of soybeans routine so that students who were experiencing physiological stress could dip their hands into it and experience immediate soothing. The strides her students made during the course of that year were impressive by any standard; the aides couldn’t believe the changes that they were witnessing. At least two of the students started speaking their first words in La’akea’s garden; another teenager went from making simple utterances to being able to explain cause and effect reasoning behind varying procedures for removal of particular plant pests. The frequency of undesirable behaviors among all the students was reduced during the duration of the garden class period, and many students carried the transformation with them into other contexts of their life. Word spread around the school that La’akea was “working miracles” with the autistic students in her garden. La’akea’s explanation was simple; though she had no prior experience with special education students, she watched and she listened to learn what it was they needed; she gave them opportunities to watch and listen in the
garden and found ways to connect with their intelligence through all the senses, including naʻau.

Research about the benefits of using natural settings in education or introducing mindfulness into schools through practices like yoga and meditation suggest\(^4\) that there are tangible benefits of increased attention and stress reduction (Burke, 2009; Napoli, Krech & Holley, 2005; Ulrich et al., 1991). However, I know of no approach to education outside Hawaiian contexts that seriously considers cultivation of the naʻau, or the intuitive intelligence of the student or the teacher, as a means to developing knowledge. Perhaps the development of the naʻau that HIMENI teachers both use and prioritize as an essential, will become a fruitful area for future study.

**NAʻAU Aspect 3: Making paʻa in the naʻau**

Paʻa is a word that is highly context dependent, as noted in in its dictionary definition; paʻa can mean physically solid, but also steadfast, permanent; finished, completed, whole, complete, learned, memorized, mastered, retained, kept permanently etc. To say that ʻike (knowledge) is paʻa in the naʻau is to say that it is fully integrated within that person, and can never be lost; the ʻike will always be available to the learner when it is needed.

\(^4\) See for instance the findings of Ulrich et al. (1991) finding that biophysical recovery from immediate stressors is much faster in natural environments than in urban; Napoli et al. (2005) find that with mindfulness practice, elementary students are able to increase their levels of attentional control and focus on several measures.
Power of making knowledge pa‘a in the naʻau was illustrated through a story told by Kaleionaona, and related here beginning with an extended excerpt from her Makaʻala Moment Reflection Log writing.43

_Nana ka maka, hooole haka pepeiao [etc]… (Observation)_

We are reading the moolelo, _Laieikawai_ in my literacy class. I was brought to tears by the foreword that was written by the author, S. N. Haleʻole. _Laieikawai_ is the first and only book published in the Nation of Hawaii, [as it was] published in the year 1863…

_Noonoo iho (Interpretation)_

It is not simply chance that this story was chosen to be the first published book in the Nation of Hawaiʻi. Far from it. Our Kūpuna could see with their own eyes aspects of our culture being taken over, stories of old being lost to stories of the haole [foreigners], Hawaiian values being replaced by those of the haole.

“…but this is the first book **printed for the people of Hawaiʻi** in the delightfully educational form of the _Kaao_ , concerning ancient matters of this native nation, in order to prevent the loss of its fascinating traditions”

Our Kūpuna chose an ancient story told in the unique, Hawaiian-style of storytelling that dealt with the ancient past...of this native nation, so that the universal, righteous traditions and values of the past may live. This is a story that was passed down orally from ancient times in the form of a _kaao_, a narrative rehearsed in prose [and] interspersed with...

---

43 Note that Kaleionaona here has elected not to use diacritical marks to assist non-speakers with pronunciation. Diacriticals were not a part of the Hawaiian language prior to the time that Christian missionaries invented ways to codify and write the language down as a means of publishing their Bible. Kaleionaona’s choice not to use diacriticals is an important marker of her stance and position regarding Hawaiian as an oral tradition, and the formatting she used has not been altered within this extended quotation from her writing. (Formatting in this segment is therefore inconsistent with the rest of the dissertation; brackets are still used to indicate insertions of translated words). All parts of the _Makaʻala Moment_ Reflection Log are excerpted so that the format may be viewed as a whole.

44 “Ke Kaao o Laieikawai: Ka Hiwahiwao o Paliuli, Kawaiheokaliula” was a _moʻolelo kahiko_ from the oral tradition, first written down by S. N. Haleʻole in 1863. Martha Beckwith translated and republished the work as _The Hawaiian Romance of Laieikawai_ (1919); the translation was again reissued in 2006, this time credited to Haleʻole as author.
song, in which form old tales are still recited by Hawaiian storytellers.

And the purpose? “So that the aloha of the people of Hawaiʻi for their ancestors and their homeland may live on forever.”

**Na mea waiwai i loko… (Significance and Application)**

Inside of the foreword of S.N. Haleʻole lies much wealth. First of all, I think his words are a testament to the intelligence of our Kūpuna. Many forms of wisdom and knowledge went into hiding as the onslaught from the West increased over time. What’s important for us as the descendants of these Kūpuna is to be able to unveil the things that have been hidden inside of the moolelo [mythic tales] of Hawaiʻi, inside of the oli, mele, and kaao o Hawaiʻi nei [the chant, song and epic tale of Hawaiʻi]. The kaao is an art form that was used to educate Hawaiian society on rights and wrongs, and to develop a deep and everlasting aloha inside the Lāhui [nation] for this place and our ancestors. What a gift!

“Take, then, this little book, and show by how you receive it, by reading and indeed treasuring and caring for it, show your strong desire for the knowledge of Hawaiʻi and your everlasting readiness to uphold it, so that it may stand forever.”

Did you all see the hoailona, the omen from our Kūpuna? There in the different kaao o Hawaiʻi nei lie a wealth of knowledge and wisdom. No need to reinvent the wheel, the ingenuity of our Kūpuna cannot be matched. So let us take the story of Laieikawai and all the other moolelo that were passed down for generations and hoʻolaha, spread them far and wide!

I plan on incorporating as much moolelo into my teaching as possible, in all its forms. Let the pua o Hawaiʻi nei [the flowers of the future generations] read the ancient stories of Hawaiʻi, let them hear from the Kūpuna the ancient stories of Hawaiʻi, let us hear, read, and eventually retell the glorious stories and works of the people of old. And then, let the keiki [young ones] retell the stories; through 2-D and 3-D art, through puppeteering (kiʻi), through hula, let them learn the art of the kaao, oral storytelling intermixed with oli and
This was and is the foundation of Hawaiian Education, so said by the author of this book.

**Ninau aku, ninau mai… (Questions to you all)**

In preparation for [reading] *Laieikawai*, I told my class the story of Poliahu and Kukahauula as told to us by [Aunty ‘Ōa‘ōa]. Poliahu is one of the characters in *Laieikawai*, so I thought telling them that beautiful story would be a good way to build background information on the different characters. I was not expecting this *papahana* [curricular unit] I am doing with my class, combined with our *papahana* [professional course studies] dealing with Hawaiian Education, would be so revolutionary [and] so eye-opening to me.

I can feel my teaching style becoming more and more Hawaiian everyday. It leads me to ask myself many questions regarding myself, my pedagogy, my school, and the system we all are subjected to: How can I continue to incorporate *moolelo* into all aspects of my teaching, whether I am teaching Math, Language Arts, or Social Studies? How can I strengthen and expand my knowledge of *moolelo* Hawai‘i? What are ways that we can re-educate Hawaiian society [about the meanings of] these stories?

From this excerpt of Kaleionaona’s writing we can feel her passion. Deep within her *na‘au*, fires have been lit and now burn with a force that is not likely to be extinguished. Kaleionaona has discovered something new that she wishes to share: the complexity and brilliance with which the people of old disguised and bequeathed their knowledge for future generations to unravel. Her new awareness of the treasures to be found within every *mo‘olelo* did not come from being “told” that such sophistication exists; this awareness became *pa‘a* in her *na‘au* because of the ways in which she learned it.
Kaleionaona built fluency in the language of the story by hearing Lāʻieikawai told by Aunty ʻŌaʻōa, by reading it repeatedly, and also by retelling it to her students along with related stories. Having understood the plot, she was able to turn her focus to the motif, the metaphor, and the veiled references that were symbolically seeded throughout the tale. Her initial readings led to her own personal reinterpretations of the story’s symbolic messages, as seen through one lens of the current era.

Repetition and fluency, automaticity and mastery, flexibility and reinterpretation are all aspects of making paʻa in the naʻau. It is from such a foundation that one is able to draw flexibly from the network of possible of meanings to use and make rich connections that inform one’s purpose and task in the moment. What we can learn from Kaleionaona’s insight and experience is that her knowledge jumped to a new level because, as she put it in another reflection, “all the pieces are there.” When all of the cultural learning elements were present, it became possible for her to weave this rich network of meanings at a new level.

For Kaleionaona and her students who work within the indigenous knowledge system of the Hawaiians, the essential cultural “pieces” that need to be present in order to further the process of knowledge becoming paʻa in the naʻau are as described in Figure 6 below. The more of these “pieces” with which one has to complete the picture, the better a learner is able to integrate knowledge in a Hawaiian way.
Cultural “pieces” essential for Hawaiian learning

<table>
<thead>
<tr>
<th>Cultural “pieces” essential for Hawaiian learning</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Moʻokūʻauhau</em></td>
<td>The sequence of genealogical emergence that gives rise to a person, rooted in a place; typically memorized early in life and recited in a context-appropriate manner</td>
</tr>
<tr>
<td><em>ʻŌlelo</em></td>
<td>Speech, the spoken word-sound, oratory, <em>kaona</em> (layered meanings). <em>I ka ʻōlelo no ke ola; I ka ʻōlelo no ka make.</em> Life is in speech; death is in speech. #1191 (Pukuʻi, 1983, p. 129).</td>
</tr>
<tr>
<td><em>Moʻolelo</em></td>
<td>The mythic tales, the stories, the legends in which treasured Hawaiian knowledge is carried forward; <em>hula</em> may be considered one of several dynamic expressions of moʻolelo, along with oli and mele.</td>
</tr>
<tr>
<td><em>ʻŌlelo Hawaiʻi</em></td>
<td>The language of the original inhabitants of the Hawaiian islands</td>
</tr>
<tr>
<td><em>Oli</em></td>
<td>Chants; often related to <em>moʻolelo</em></td>
</tr>
<tr>
<td><em>Mele</em></td>
<td>Songs; often related to <em>moʻolelo</em></td>
</tr>
<tr>
<td><em>Wahi pana</em></td>
<td>“Storied places,” with their own legends and genealogies that are linked to <em>kānaka</em> and <em>akua</em></td>
</tr>
<tr>
<td><em>Hana noʻeau</em></td>
<td>Material arts and visual arts</td>
</tr>
<tr>
<td><em>Mālama ʻāina</em></td>
<td>The practice of caring for the land, giving back (<em>hana</em>, or work) to the land; involves physical activity</td>
</tr>
<tr>
<td><em>ʻIke ʻāina</em></td>
<td>The practice of listening to the land with all the senses including <em>naʻau</em>; receiving ‘ike (knowledge) from the land</td>
</tr>
<tr>
<td><em>ʻOhana (Kūpuna to keiki)</em></td>
<td>Inclusion of all generations together whenever possible, so that multileveled actions and understandings are present, allowing the flow of ‘ike within interactions</td>
</tr>
</tbody>
</table>

**Figure 6.** Cultural “pieces” essential for integrative Hawaiian Learning.

These essential “pieces” don’t much resemble the typical pedagogy of conventional education, yet they do resemble pedagogies from oral traditions that target sustained learning in the matrix of setting, relationship, contextual motifs and other triggers that together evoke knowledge (Mugalu, 1995; Rubin, 1995). While many HIMENI teachers strive to incorporate these essential pedagogies to complete the picture of cultural learning at the level of the *naʻau*, they often must be
reshaped and recrafted so that the students can become interested enough to do their own “sensemaking” with the material. Hoapili developed a chart that sets out five of the Hawaiian *akua* (deity and their manifestations) in a spatial relationship determined by the cardinal directions. He used this as curriculum organizer that, whatever *papahana* he was teaching, it allowed his students to orient themselves to these five dimensions. He reported his observation that this seemed to simultaneously help them make better sense of the new content material, and to grasp inductively the aspects of the *akua* (spiritual forces and their manifestations) as understandings developed over time. This type of innovative approach is based in the same integrative paradigm that is evoked by the critical pieces for *naʻau*-level learning in the table above. The HIMENI teachers are discovering ways to design learning experiences to frame, encourage and activate knowledge development that is *paʻa* in the *naʻau*, and will continue growing and expanding the woven network of meaning for a lifetime.

While HIMENI teachers are doing far more than just “contextualizing” the information that they teach, there is an interesting point of parallel to be found in studies on contextualizing content for teaching. Rivet & Krajcik (2008) found that contextualizing science instruction contributed to students’ grasp of challenging science concepts. They posit that some of the reasons for that may be connection to prior knowledge, active engagement in a learning task, as well as the presence of cognitive supports that allow students to distinguish between ideas and connect them by developing a sense of the relationships between them in personal ways. Rivet and Krajcik conclude that increasing the contextualization of instruction can boost both cognitive and motivational forces in support of quality learning.
Discussion: NAʻAU and Adaptive Expertise

This consideration of the three aspects of NAʻAU as a theme show that, if we consider the naʻau as a sense, and structure experiences and feedback to inform that sense, there are benefits for learning that extend far beyond the bounds of what can typically be expected from a typical school based experience. From the range of emotions that is a part of teachers’ and students’ life in school to the power of a simple garden class or a very old story, incorporating the naʻau in learning introduces the unknown and enhances what we think we know. Not only is information received and reframed through the intelligence of the naʻau, but the emotions and impacts of the experience may also have long-term impacts on the individual at many levels.

Perhaps the simplest and the most profoundly significant parallel between NAʻAU and cognitive science’s notion of adaptive expertise is that one must carry with them conceptions that do not inhibit the ongoing acquisition of new knowledge and which allow new, unexpected ideas to be received— even those that may require adjustment of prior ideas and schema (Crawford et al., 2005b). This willingness allows for ongoing learning from experience over time, thus creating a base of substantive variability in experience that allows the practitioner to draw on all types of knowledge as they adapt to situations at hand (Barnett & Koslowski, 2002).

In their description of adaptive expertise, Hatano and Inagaki (1987) distinguish between two different courses of expertise. The path to routine expertise may lead to understandings that are limited in their robustness (Chi, Glaser & Farr, 1988), or to applications of knowledge that result in high efficiency but low innovation (Schwartz, Bransford & Sears, 2005). The path to adaptive expertise leads
to knowledge and theories that are constructed in such a way that they help a practitioner to adapt prior knowledge to the specific task at hand (Barnett & Koslowski, 2002).

While inclusion of na‘au in teaching and learning contributes to the development of a trajectory of adaptive expertise in a learner, we must recognize that the na‘au accomplishes this work through an entirely different means. The embodied sense of the na‘au informs the developing stream of adaptive expertise with new sources of information as they are received from ‘ike ʻāina, the elements of the natural world, the kūpuna (elders and ancestors), the wahi pana (storied places), the learning ecology and the existing network of meaning as it has been woven by the ever-growing learner from the cultural context.
NALU

1. nvi. Wave, surf; full of waves; to form waves; wavy, as wood grain. Ke nalu nei ka moana, the ocean is full of waves. ho‘o.nalu To form waves.

2. vt. To ponder, meditate, reflect, mull over, speculate.

3. n. Amnion, amniotic fluid.

Nalu is the word for wave, and its related term he‘e nalu meaning to surf, or to ride the waves, best describes the way that the HIMENI teachers referenced this theme. The key message of NALU is to recognize and make use of the waves that roll through the learning ecology (be they large or small), seeing them as opportunities and affordances\(^{45}\) presented by the context. Responding to the unexpected and the unanticipated without resistance allows new factors to come into play that may enhance beneficial outcomes and help students reach their goals.

He kā‘e’a’e’a pulu ‘ole no ka he‘e nalu.
An expert on the surfboard who does not get wet.
Praise of an outstanding surfer.
#649 (Puku‘i, 1983, p. 73)

Demonstrating a high level of skill and expertise is highly valued in Hawaiian culture, and this ‘Ōlelo No‘eau was a statement said in praise of surfers and others who delivered outstanding performances. Rare indeed is the surfer who catches and rides every wave effortlessly; this proverb figuratively points our attention at the ideal toward which all surfers strive, even though in practice, everyone gets wet. This proverb can be read in contrast to its counterpart:

He ‘o ‘ia ka mea hāwāwā e ka he‘e nalu.
The unskilled surfrider falls back into the water.
#885 (Puku‘i, 1983, p. 93)

---

\(^{45}\) The term “affordances” is used here to connote something that the context or environment offers to the person who is engaged in it (after Gibson, 1986, p. 127); an affordance is a feature of a thing or an environment that suggests a range of possibilities for action.
Speaking of the qualities in a person that were most highly desired, Pukuʻi tells us that the *Kānaka Maoli* “admired achievement”:

> They wanted perfection. In the Makahiki games, everybody admired the winners because they were the best. I think everybody noticed the excellence and skill that the winner showed more than the winning,” (Pukuʻi, Haertig & Lee, 1972 Vol. II, p. 295).

Math teacher Hiipoi confirms that she has seen this drive operating among her students, and interprets it as follows:

> …in the Hawaiian way there is no perfection, only excellence. Hawaiians know that maybe once [in] their life perfection will occur, but the rest of the time, excellence is the norm to strive for.

Mark noted that in trying to motivate his Hawaiian high school students, he has learned it is very important is to make sure that you never point out that they haven’t achieved perfection, even if you may praise them in the same breath. He comments that, unfortunately, it is from experience that he has learned that some Hawaiians perceive it as “the highest insult one can offer” if one dares to point out the distance between the student’s current performance and the ideal. Mark writes, “it would be better to look [at] the person’s expression of excellence as a failure than to compare it to a notion of perfection.” Just as there is an understanding that excellence will rarely be reached, so too is there an understanding that every effort is already the best performance that an individual could achieve at his or her current level of knowledge.

---

46 An annual festival of spirited competition in sport, strategy, oratory, and other forms of expert challenge. Makahiki games were played during the Makahiki season, a time of of peace marked by abundant harvests and religious observances.
There is strong cultural encouragement to make the best of every situation and use it as an opportunity to kūlia:

*Kūlia i ka nu’u, i ka paepae kapu o Līloa.*
Strive to reach the summit, to the sacred platform of Līloa.
Strive to do your best.
# 1914 (Puku’i, 1983, p. 205)

The cultural emphasis on cultivation of *pono* and *kūlia* (striving for the highest) is part of what compels *Kānaka Maoli* to search for the message and the opportunity within every situation that arises, even when it is an unexpected turn that doesn’t appear to be fortuitous. This information forms an important background for understanding the theme of NALU since it is partly due to the strong cultural imperative to ‘choose the best path for all’ that we see teachers seeking to *nalu* as a path toward optimizing learning for their students.

Some of the unexpected, messy and “ill-structured” problems that arise as “waves” to be ridden (or fallen from) in the teaching context can be framed as opportunities to rise “higher” toward the summit, and come even closer to perfection than was possible beforehand. HIMENI teachers value the ability to flow with these waves of possibility and let go of plans or solutions in response to the new pathways that become visible through the peaks and troughs of daily teaching events. People,

---

47 Ill structured problems tend to be highly contextualized and have multiple solutions; they rarely fit tidily within the domain of a single discipline (Simon, 1973; Voss & Post, 1988; Jonassen, 1997).

48 As a strategy for discerning what is truly optimal in a case (and balancing immediate-term acceptable outcomes with longer-term improved outcomes), the practice of satisficing discussed by Herbert Simon (1969/1996) is not dissimilar from a Kanaka Maoli approach. With their strategy for selecting optimal solutions Hawaiians managed to meet the needs of group survival with style and verve (prior to the chaos of the post-contact era), and the cultural strategies for optimizing persist. Kānaka Maoli did not settle for the first solution; they would persist until the best solution was found or overshadowing constraints began to factor in (see, for instance, the custom of the ali ‘i’s decision process using kalaimokū or kūkākūkā processes described in Chun, 2011).
place, project and cultural narrative all work together with the teachers’ learning objectives, assessments, planned learning experiences and visions of real-world outcomes to determine what is actually embodied in the learning experience; the HIMENI teachers seek to use all available elements to optimize that learning experience. A teacher who can NALU is focused on a goal, yet un-attached to specific plans; s/he is responsive to signals, needs, and affordances that arise within the teaching context, and dares to make ‘moves’ in teaching, even when the meaning and effects are not certain. As one of most regularly and explicitly invoked themes in the teaching context, NALU became highly visible within HIMENI teacher practice.

<table>
<thead>
<tr>
<th>HIMENI teachers’ use of NALU as a theme included:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NALU Aspect 1</td>
<td>Responsiveness to opportunity; non-attachment to plans</td>
</tr>
<tr>
<td>NALU Aspect 2</td>
<td>Taking risks; making mistakes visible so that everyone can learn</td>
</tr>
<tr>
<td>NALU Aspect 3</td>
<td>Willingness to improvise in response to changing conditions or emergent problems</td>
</tr>
</tbody>
</table>

**NALU Aspect 1: Responsiveness to opportunity; non-attachment to plans**

*Piʻi mai ka nalu* is a phrase that can be translated as “Rising are the waves!” or, in the modern idiom, “Surf’s up!” The phrase needs little interpretation. When the waves are coming up, it is time to go surfing; other tasks can wait for a day because the waves are here now. Hawaiians have an existing cultural strategy for optimizing opportunities as they arise; the HIMENI teachers refer their use of it in the theme NALU, and they use it to find ways of creating better balance in the learning environment, even after plans have already been set in motion and conditions change.
The HIMENI teacher candidates were riding in two vans as we drove to meet a community member who had agreed to introduce us to his *wahi pana* (a place told of in legend and genealogical history) and guide us through some *mālama ʻāina* (hands-on interaction with the land; giving back). Someone in the first van noticed that the second van wasn’t anywhere in sight. They pulled over and waited, but the second van was nowhere to be found. Our cell phone calls didn’t yield responses in the rural service area, and everyone was stumped—where had they gone? Would our community member be offended, or even leave, since we were now over thirty minutes late? Finally the van appeared, pulling up behind us on the side of the road.

The crew in van two explained that during our short morning drive they noted we had entered a different district; some among them felt it was important to stop and conduct appropriate protocols at the *heiau* (sacred site of an ancient temple complex) known as Hale o Lono.

An impromptu discussion ensued regarding the genuine question of which path was more grave: to offend our community guide by being late, or to imbalance the relationship with *akua* by failing to perform protocols that personal *kuleana* (responsibility due to knowledge one carries) compelled some of the teachers to conduct when entering a new district? It was at that moment, standing between two vans at the side of the road and debating what the more *pono* action would have been, that the word *nalu* first entered the group’s shared vocabulary.

Parties from both vans encouraged the other to see their point of view and be more willing to “nalu,” which, in this case, meant let go of fixed attachments to what we thought was required, and adjust plans so that everyone’s needs could be met.
Agreement was reached that communication between the vans would have made the situation more *pono* by allowing all perspectives to be heard before taking action. Leaving the roadside debate behind, we continued on to meet with our host, but from that point forward, “You got to *nalu*!” became a favorite phrase among the HIMENI teachers.

With this refrain, teachers would encourage one another to pay attention the affordances available if they could just let go of what they thought they had to do; one lesson of *nalu* was that sometimes fixed points were truly fixed, yet other times they could shift or pivot if the right type of pressure was applied. Peers encouraged one another to go beyond the bounds of what they believed they had permission, time or resources to do. By being fully aware and present in the moment of opportunity, the HIMENI teachers could respond, and open up the best-case scenario of learning experience for their students, day by day. Teachers said things to their students like:

> We’re going to *nalu* a little bit today because the “junk boat” [made of plastic from the Pacific gyre] just arrived here on its scientific mission to measure ocean plastics, and we’re gonna go down and *kōkua* [assist] them.

Like jazz musicians who use the structure of music to explore the infinity of variations in the brief moments of their performance, HIMENI teachers discover their own responses to opportunities raised by contextual influences, as they are manifest within the structure of the learning ecology.
NALU Aspect 2: Taking risks; making mistakes visible so that everyone can learn

Hiipoi identified a problem in her classroom: the students who grew up speaking ‘Ōlelo Hawai‘i as their first language faced challenges in understanding the math vocabulary that couldn’t be illustrated by the activities of daily life. For example, trouble with the word “divisor” could interfere with a students’ understanding of the long division process and lead to low performance that didn’t match that student’s potential.

By talking with students and families about their interests, she identified three areas that, as a math teacher, could potentially help her to reinforce the usefulness of mathematics for the students in a culturally significant way; these areas were music, mapping and computer programming.

Letting go of her mathematics “Teacher’s Guide” was a big risk for Hiipoi, not only because she had only previously gone off-road in small side projects, but because her students’ progress would now be fully in her own hands. Entrusting her students’ test scores to a project that might appear unrelated to math in the eyes of parents and her school administrators was hardly a comfortable move in the era of No Child Left Behind when pressure to perform on standardized tests leads many teachers to feel that teacher-research and experimentation are simply too “high-stakes.”

The mapping project that Hiipoi created did not resemble the questions on the Hawai‘i State Assessment in any way; she structured the curriculum she created to be interesting and engaging to math students at all levels, even though some of the 6th
graders in her mixed 6-12 classes had only mastered addition, subtraction and multiplication thus far.

Describing the learning experiences that she designed, Hiipoi explained how she:

used a topographical map of Niʻihau to reinforce algebraic understanding of an x-y coordinate system, distance calculation, use of scaling, proportions and interpolation. The lessons also taught the use of computers to program data into three dimensional graphical representations.

A visitor to Hiipoi’s “math” classroom might have been surprised to see groups of students standing around four topographical maps, each with compass and protractor in hand. They called out numbers in ʻŌlelo Hawaiʻi to their partners seated at computers in the back; the data-enterers intermittently engaged in their own conversation, each trying to convince the other of the appropriate commands to “try” for different purposes.

Hiipoi explained that when the students were working on mapping or programming projects, her approach was to step in when a particular need arose for a “foundational skill.” At that time when they’re primed to seek the meaning within the mathematics, Hiipoi says, “I make extra efforts to use these skills to present their use along with the ‘needed skills’ to accomplish the part of the learning being represented by the lesson.” This allows her to convey the foundational skills and academic vocabulary required as she actively illustrates to the student how they function in the specific context of solving the problem at hand. To Hiipoi, this is a very efficient and comprehensible way to teach math for English Language Learners to help them progress. As she puts it:
This technique has what I term as a ripple effect—providing not only the intended lesson, but [adding] skill building in the context [for which it is] needed, [all] for the purpose of knowing and practicing the foundational skills.

Maps of Ni‘ihau form a connection through story and place; the small island of Ni‘ihau where ‘Ōlelo Hawai‘i has consistently been spoken throughout the years, is a point of origin for Hiipoi’s students, representing a distant cultural homeland that many of them have never seen. By selecting Ni‘ihau rather than Kaua‘i (which might have been easier to illustrate conceptually), Hiipoi drew upon another affordance in the learning ecology: the connection to mo‘olelo (story; cultural or familial narrative) that the students make personally through their developing knowledge of familiar place names on the map.

In Hiipoi’s “off road” mathematical adventure, mapping became a focal point for interpreting mathematical concepts in context and giving foundational skills an applied meaning. Hiipoi’s process involved a significant degree of learning by doing; by failing fearlessly along with her students, her course corrections allowed her students to stay on target as they acquired academic vocabulary and foundational skills when they were ‘needed skills’ in context. Many teachers might have feared that the students would not understand advanced concepts if they lacked foundational skills; others might have been unwilling to take on mapping and interpolation, fearing that such a project might expose their own edges of mathematical understanding to the students. Hiipoi took these risks, and her students reaped a big reward, as seen in their improved performance on unit tests and state tests alike that year.

Just as Hiipoi took risks that her students could see and experience, the students themselves also seemed to benefit from taking learning risks that involved
emotion, public performance and other ways of stretching beyond their comfort zones.

The ill-structured problems that challenge teachers to face any inconsistencies within their own practice will also challenge the students in time. By presenting their students with real-world challenges such as invasive species management or the loss of native pollinators, teachers give students sheltered opportunities to experience disequilibrium.

Writing about her recent experience in a class where she felt an acute sense of “not knowing,” Lani offered her view:

I believe that the process [of HIMENI teaching] evokes us to think about our thinking and processes. I do believe that, as teachers, it is incredibly important to be metacognitive and critical of our practices. Nevertheless, [today’s experience] was like walking into a Hindu philosophy class at 6am in the morning. You are totally not ready, treading water to make sense of anything, and half of you just wants to go back to sleep and pray for a new day.

Nobody likes to run into a burning building; even a veteran fireman feels fear every single time, but he does it still. With every cycle of experience, there is an immediate purpose (clearing the building, rescuing a loved one), as well as a long-term benefit: his sense of confidence in his own ability to navigate the fear and survive the unknown. Disequilibrium, almost by definition, feels upsetting, but through experience, both the HIMENI teacher and the student become more and more accustomed to the feeling of moving in the dark.

Speaking about what she wishes for her students, La‘akea said:

I would like to help them see that failures are forms of assessment tools and not to give up, but to take from the experience of failure the outcome for better success.

By challenging themselves to linger in the uncomfortable space of “not
knowing” as they make observations about ill structured problems that emerge, HIMENI teachers are able to gather more data to inform their theories about which factors in the learning context can be used to impact student learning positively. They practice nānā ka maka, hoʻolohe ka pepeia, paʻa ka waha as the Hawaiian ancestors did to learn; doing this, the HIMENI teachers avoid assumptions and jumping to solutions. By watching and waiting, taking risks based on those observations, and getting cozy with failure, the HIMENI teachers are learning from their students in every moment— even when it would feel much easier to jump in and take control.

To do this uneasy work, teachers and teacher educators must assess within themselves what their responses are to risk taking at a level below that of conscious awareness. Where are the micro-flinches that cause us to shy away from a sensitive issue or to keep to the center; are they visible for our students to see and mirror back?

NALU is not just about teachers taking risks so that they can improve their practices bit by bit; the theme is also about practicing the nalu way of being in all of life so that they can engage it in the learning ecology (especially when faced with challenges), model it for their students and practice it alongside their students as fearless co-creators of new curricular paths and learning experience.
NALU Aspect 3: Willingness to improvise in response to changing conditions or emergent problems

Knowing-in-action often means acting without fully knowing where the actions will take you. HIMENI teachers demonstrate that there are benefits to doing this: it leads to new directions that could never before have been imagined. Teaching in a NALU way becomes a co-construction with the environment, the context, the students, the people and the interdependent relationships involved.

Lani told the story of one day when her community host did not seem to be on time for their tour of the oceanside wahi pana they were visiting on a field trip. She thought: “we’re in a special place, we’ve got people, and we’ve got time.” Instead of piling back onto the bus and returning to campus early, they walked the park together, each sharing what they knew about the traditions, winds, plants and ocean life of the place. After an hour or so, one of the adults who was there to accompany the group began to share some stories, and everyone was held in rapt attention until lunchtime came and the community host (whose interisland flight had been delayed) finally arrived. Lani told her peers how grateful she was that she had trusted that “we can make something of this” even though she had no idea what would come (or that there was a gifted storyteller among them). Students produced a book of poetry to interpret their powerful memories of that *huaka‘i* (trek).

Kumukea spoke about how her experience teaches her that place-based learning is full of unexpected benefits and problems; she commented that “the teacher has to really be willing and open to say, “Okay, you know what? I don’t know how this is going to go but I’m going to choose a path and stick with it until it’s clear where we’re headed or I need to try something else.” She told the story of one day finding a
sick chicken on the doorstep of her classroom. Her response was to recognize the excitement, curiosity and energy that the students had as they gathered around the door during morning recess each trying to see and engage.

Giving some time to watch the students’ reaction to the chicken situation allowed her to realize with surprise that:

My students know all about ranching and animal husbandry and since I didn’t grow up here I never would have known that. Here, these fourth and fifth graders, that I thought knew nothing about science—they know all about animal husbandry and how to take care of a sick chicken; they’re brilliant and I had no idea.”

Kumukea reflected on how glad she was that, that day, she’d had the willingness to say, “Okay, so there’s a sick chicken literally on our doorstep. What are we going to do about it?” instead of treating it like an unwanted distraction. Her students got to be in roles that were significant, and mattered to one another as well as for the chicken. The incident completely changed her perception of one of the boys who she had suspected to have special needs because of his limited repertoire of communication. He was confident and vocal when he had that chicken in his arms and could feel his own sense of competence.

Kumukea expressed that she learned from the “chicken situation” how she needed better ways to understand her students’ needs and gifts; her students also learned that worthy lessons can and do come from the context around us. Kumukea started improvising when she opened the door of her classroom tent to that chicken; she lost some class time and didn’t cover all the planned lessons for that day, but she gained a deeper respect for her students’ knowledge of the life sciences. That awareness reframed her views of what her students could accomplish and factored in
to her approach to the design of future learning experiences that involved more science. By being willing to NALU and “lose” part of a teaching day, Kumukea gained information that allowed her to reframe her students’ level of scientific expertise and made it possible for her to advance their knowledge along a far different trajectory of scientific exploration rather than ‘facts.’

Improv expert Patricia Ryan Madsen calls upon all improvisers to “say yes” to situations as they arise; she encourages them to “pay attention…wake up to the gifts…take care of each other…make mistakes please…and] enjoy the ride” (2005, p. 7-8). The HIMENI teachers already use the practices she suggests, and indeed they do continuously receive new information and realizations about pedagogy along the way. Taking cues from action and context lead to the intrinsic satisfaction that the surprises of improvisation often bring, but they may also lead to directions that are inconceivable from the original point of view— directions which may transcend existing models.

NALU, as a theme, encourages HIMENI teachers in responding to opportunities arising from context, taking visible risks and improvising. Use of this theme reveals new directions that can be explored further and refined into pedagogical strategies. Historian Malcolm Nāea Chun points out through detailed examples that there was an enduring Hawaiian tradition of physical experimentation that was employed to investigate observed phenomena (2011, p. 93). Taken together, these aspects of NALU and the tools for systematic experimentation discussed in the next
two sections suggest a powerful means by which teachers may develop new knowledge at the intersection of theory and experience.

Discussion: NALU and Adaptive Expertise

Crawford et al. describe the characteristics of adaptive reasoning by teachers in the following ways (2005, p. 18):

- Slow to draw conclusions, building mental model of situation from evidence
- Thorough, systematic exploration of data
- Tentativeness, posing questions to self
- Test hypotheses and judgments against new data
- Build understanding of situation through data
- Explicit statements about not-knowing novel content
- Explicit testing of model with nonconfirming information
- Shows interest, curiosity about novel content

These are not dissimilar from some of the orientations to knowledge observed within the HIMENI practices, and the HIMENI practices of being willing to take cues from the environment adds to this list. We also see a parallel in that, as in the case of Kumukea and the sick chicken, “Innovation often requires a movement away from what is momentarily most efficient for the individual or the organization.” (Schwartz, Bransford & Sears, 2005, p. 44). The flow of action, noticing, and acting again that many of the teachers describe when they NALU may also be interpreted as a form of “reflection in action,” as described by Donald Schön (Argyris & Schön, 1974; Schön, 1983, 1987).
The theme of NALU encompasses the practices of being resourceful and working with what you have, as well as opening up to things that a teacher may not yet realize that s/he has as resources to benefit learning.


**MAKAWALU**

maka.walu

vs. Numerous, many, much, in great quantities (sometimes used with implication of chiefly mana). Lit., eight eyes. Cf. -walu [the number eight]. Nā wailele e iho makawalu mai ana, waterfalls pouring down in quantity. Ka iho makawalu a ka ua, the great downpour of rain. Makawalu nā moku, many islands are scattered haphazardly (Puku‘i & Elbert, 1957).

The dictionary describes *makawalu* as meaning “numerous” or “in great quantities,” while noting its literal translation as a compound word: maka (eyes or face), plus walu (the number eight). In modern parlance, the reference to “eight eyes” is often associated with the mythic capability of a spider to see in all surrounding directions. In the Hawaiian speech of old, walu (eight) and kanawalu (eighty) are numbers of special significance. Makawalu is a word that also has been used in description of the complex and multifaceted reasoning of ancient Hawaiians as they classified natural phenomena and described relationships in the world of akua, ‘āina and kanaka.⁵⁰

Customarily, *makawalu* is a word used in today’s language to indicate seeing something from numerous points of view; it describes the process of searching to see or imagine the impacts of an action from perspectives beyond one’s own. For Hawaiians, the process of seeking to understand significance from all points of view is distinctive because “all points of view” includes those of kānaka (people including those living, ancestral and yet to come; also considered are those across the spectrum of status or power), of ‘āina (the land itself and its creatures), and of the realm of akua (the spiritual world and all its inhabitants). The very notion of “significance” of an

---

⁵⁰ See, for instance, the initiative called *Papakū Makawalu* by the Edith Kanaka’ole Foundation; also Queen Lili‘uokalani’s interpretation of the Kumulipo in her 1897 text “An Account of the Creation of the World According to Hawaiian Tradition.”
action or choice itself must also be understood in multiple dimensions: significance in
relation to past concerns (genealogical, social, political and historical), as well as
present concerns of all types, plus future concerns for the thriving of akua, kānaka and
ʻāina. To makawalu or explore an issue from “all perspectives” that are both present
and potential within the context is to seek understanding from points of view that
simply cannot be fully grasped—yet which must be attempted.

Makawalu, as a process, typically involves posing questions. When making a
decision, it is easy to wonder “How will this choice affect me?” The person who elects
to makawalu doesn’t stop there, and goes on to ask:

How is this choice going to affect the other community stakeholders
who are involved? How is this choice going to affect future
generations? How is this choice going to affect my relations on land
and in the sea?

Such an inquiry might be followed by reflective anticipation: “If I make this
choice, what other decisions will it make possible?” This process of looking from
multiple points of view about the effects of a choice or decision is fundamentally
Hawaiian since this type of reflective inquiry is important in nurturing the balance of
relationships (past, present and future, across species and across realms). In other
words, the act of makawalu is essential to nurturing the state of pono. Makawalu was
one of twelve cultural values51 that HIMENI teachers identified as clear signs by
which, when broadly practiced, one could know that Hawaiʻi is progressing along the
path toward ea.

51 Naʻau was the only other one of the eight themes in HIMENI teacher practice that also appeared on
the list of twelve enacted cultural values the teachers identified as clear signs by which one can know
that Hawaiʻi is progressing on its path toward ea. (See page 32 for reference).
The *makawalu* process may take into account factors that are immediately visible, as well as prior observations of action in relevant contexts, and perhaps knowledge (and mental models) of relationships between factors. *Makawalu* draws upon one’s ability to listen/imagine and “stand in the shoes of” viewpoints beyond the personal. Problem-solving that begins with deep *makawalu* reflection from diverse perspectives generally leads to solutions and outcomes that are viewed as *pono*, since the community’s concerns have been anticipated and addressed as part of the solution-seeking process.

*Makawalu* is not a specific cultural process with discrete phases or labels. *Makawalu* may incorporate both private and public steps, and may involve only one individual or an entire community; it may be conducted for a specific purpose, in the interest of solving a problem, or as a habit of mind applied during observation and reflection.

Generally, the practice of *makawalu* includes consideration of factors both veiled and visible. Language use, genealogy, geographical location, season of the year, birth order of persons involved, interpersonal dynamics, historical relationships, presence of elemental forces, *akua* (spiritual realms and deity), *moʻolelo* (story), correspondences between *mauka/makai* (uplands/lowlands), long-horizon sustainability, are examples of the kinds of contextual factors that might have relevance for decision making in a particular situation.

Consideration of the potential impact of a choice on multiple factors from multiple perspectives can quickly become complicated—thus it is easy for someone who has experience practicing *makawalu* to understand the connection between the
dictionary definition of *makawalu* as “numerous” and the vernacular use of the term to describe this process of reflective anticipation. The aim of *makawalu* is what unifies the branching process: to discern the next steps—with regard to a particular path, decision, situation or challenge. The practice of *makawalu* supports the thoughtful selection of a path forward that is likely to contribute to *pono* (a dynamic balance) within all relationships and within all realms, past, present and future.

As one of the eight themes that became part of the HIMENI teachers’ conceptual framework, MAKAWALU shares two important characteristics with the cultural value placed upon the practice of *makawalu*. MAKAWALU is characterized by the practice of dynamic perspective-taking, and the active anticipation and/or consideration of context in pursuit of a shared outcome—one that is desired by many in the school community, not the teacher alone. For example, after realizing a new insight about how to reframe some curricular plans that he and his teaching partner were working on, Kūpuno exclaimed “we need to *makawalu* that!” Rather than stopping with the initial insight, for these two teachers, the habit of MAKAWALU guided them to use their new realization as a point of entry into deeper inquiry.

<table>
<thead>
<tr>
<th>HIMENI teachers’ use of MAKAWALU as a theme included:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAKAWALU Aspect 1</strong></td>
</tr>
<tr>
<td><strong>MAKAWALU Aspect 2</strong></td>
</tr>
<tr>
<td><strong>MAKAWALU Aspect 3</strong></td>
</tr>
</tbody>
</table>
MAKAWALU Aspect 1: Value of taking multiple points of view before making decisions

To illustrate this aspect of MAKAWALU, we revisit the story of Hiipoi, a teacher at ‘Eli‘Eli School who made the decision to go “off-road” with her students and leave the math textbooks behind. Hiipoi elected to take a risk and develop her own curriculum because of the benefits she anticipated for students if she could create a set of lessons to teach key concepts in a manner sensitive to their language learning needs— one that conveyed accessible mathematical content and that was engaging for the students at the level of cultural purpose. Hiipoi initially imagined that she would ask students to research, assemble and illustrate (with visual image, metaphor and related exercises) a dictionary of Hawaiian mathematical terms that could serve as a tool for other learners.

Hiipoi knew that her students had responded well to the occasional routine assessment of finding visual images on the internet to metaphorically describe math concepts (such as variability, distribution, congruence, etc.), and she guessed they would also learn from the collaborative task of expanding, structuring and assembling their collected information into a mathematical resource for others. In her words, the benefits of this assessment exercise were that:

Each student gets a chance to share [his/her] imagery and defend the visual definition of the mathematical term. This technique works very well for native speakers and helps to bring meaning to terms that have no common everyday meaning in their native tongue.

By asking learners to represent mathematical concepts as they understood them, over time Hiipoi gained awareness of how her students conceptualized math differently.

---

52 See p. 235 of this Chapter, in NALU, Aspect 2
than the conventional system she had studied and in which she had become so proficient. The assessment had been beneficial for revealing conceptions and misconceptions in student thinking, but it also helped Hiipoi broaden her pedagogical content knowledge of how this group of students who ‘thought in Hawaiian’ might respond to certain teaching strategies in the presentation of particular concepts.

While other teachers might have taken this inspiration to make a visual math reference guide as a ‘good enough’ place to start diverging from the textbook, Hiipoi chose to MAKAWALU. Even though she was happy to have found an idea that satisfied the school’s math requirements, was within her area of expertise, and seemed fairly easy to orchestrate in the learning environment (given the ease of internet access), Hiipoi followed the Hawaiian cultural pattern by continuing to search past an initial satisfactory solution to consider the impact of this new curricular choice from multiple different perspectives. She pushed beyond what made the most sense to her, making an effort to consider from other points of view what would be of greatest benefit to her haumāna (pupils) in their context. Hiipoi asked herself how a new curriculum could impact her students’ test scores and how it would contribute to pono in the community, as well as how it might change their attitudes and engagement in mathematical practices.

Using the weekly student check-in time to conference individually with her students, Hiipoi began asking them directly about their sense of how math had importance in the world—what did they think it was good for? She had noted that in previous opportunities to visually define math concepts, “a large majority of the student-selected images were representations that could not be linked to an event that
would be likely to occur in their life experiences.” Recognizing this, she sought to understand this pattern further. Based on her experiences with this group of students, Hiipoi postulated in a journal entry that “often student difficulty in learning math stems from a lack of identifiable purpose for the use of the [concept taught].” It was important to Hiipoi to overcome this challenge by introducing mathematical concepts in a matrix of meaning and enduring value.

To learn even more about what might help her students, Hiipoi interviewed her students’ peers from other classes during lunchtime; she talked with their siblings and cousins in other grades, and set up time to talk with parents before and after community events they were already attending. She wanted to know how mathematics played a role in all their lives—or how it could play a role, if her lessons had the effect she desired. Hiipoi found ways to get insight on this issue from contexts and perspectives stretching beyond the daily teaching environment.

Following this process of MAKAWALU, Hiipoi began to consider her students’ interests in music and computers (making apps and looking at online maps) as ripe mathematical domains—she saw that perhaps these were areas to explore as a possible focus for the new curriculum unit. Ultimately, Hiipoi decided to pursue mapping as a focus, in which scaffolds could be built side by side for both mathematical and cultural knowledge to achieve a purpose: making a connection with the island of Ni‘ihau, a place that was linked to generations of this community’s histories and family stories.

Looking from points of view that included and extended beyond her own, Hiipoi was able to do what her colleague Kaleionaona encouraged all HIMENI
teachers to do: “ensure that not only is learning given a real context, but that consideration is given to the effect our learning could have on the context.”

Hiipo drew upon the MAKAWALU theme to become confident in her selection of mapping as a curricular focus that could meet locally-valued criteria of addressing needs in the school environment, in students’ lives, and in the one-of-a-kind shared experience of their Ni‘ihau community.

MAKAWALU Aspect 2: Simultaneously occupying multiple positions (both/and)

Positivist epistemology has as its trademark the claim that a single “reality” exists, independent of our perceptions of it— one which is unchanged by our relationship with it (Lather, 1992; Singer, 2005; Tuhiwai Smith, 1999). This epistemology has given rise to binary thinking and the persistent folk belief that human perceptions must either be “true” or “not true,” in spite of decades of challenge by quantum physics (Wigner, 1960; Smith, 2003), abundant post-positivist research methodologies (Giddings, 2006), and the diversity of indigenous epistemological approaches that predate the rise of positivism and persist, unbroken, in indigenous communities of the present (Cajete, 1994, 2001, 2005; Peat, 1994).

As discussed in the NA‘AU section of this chapter, Hawaiians understand the body as the primary instrument for knowledge development and learning. Since there are many bodies in a community, Hawaiian epistemology anticipates that simultaneous, differing truths will emerge from differently-embodied points of view. This multiplicity is seen as an asset, strengthening the whole community. The

---

53 Underlining emphasis is preserved as written by Kaleionaona.
acceptance of simultaneous and multiple versions of a narrative are also clearly evident in Hawaiian storytelling traditions that specifically represent characters and aspects of a tale in relationship to the audience and context for the telling (Bacchilega, 2007; Ho’omanawanui, 2007, 2010). In a case where multiple contexts and multiple perspectives lead to multiple truths seen side by side, the Hawaiian response is neither outrage at such paradox nor the perception of unreliability. Rather, if any tension arises from the presence of multiple narratives, the overlap and interrelationship of those narratives is seen to strengthen the perspectives at hand—like tributaries flowing together into a river that encompasses the perspectives of all, providing comprehensive information about the conditions that must be fulfilled to establish *pono* for all perspectives represented in that situation.

When the issue of how to address polarizing standpoints arose in one group discussion, HIMENI teachers resolved it by reframing the conversation and seeking a “bigger picture” perspective that could contextualize both points of view. At one point Lani revealed her fears that, even though she intended to teach values for collective sustainability, she might actually be using practices that rewarded individualism, thus sending an inconsistent message to students:

So I ask myself: How is my pedagogy? Is it deeply, on many levels, reflecting the value of interdependence? [I mean] the mechanism… not only the meat of the content.

As a listener to Lani’s reflection, Ha’okea felt instantly defensive about Lani’s frank discussion of this discrepancy in her own practice (for several reasons related to his own pedagogy that he enumerated freely later on). In the moment, Ha’okea challenged Lani’s stance without holding back his emotions:
I agree that the key to sustainability is interdependence, but if we’re teaching for that, we should be providing a world where they can practice what we’re teaching. Are we providing our seniors [12th graders] with enough cultural capital to survive in the world today? Our Hawaiian communities are so detached and shattered. Our kids in O‘ahu are going into the system working a 9-5 low-paying job. To me, that is not “enough” cultural capital. Does it seem that way to you?

Interrupting their highly-charged exchange, Aunty Iwi reminded them both to take a step back and look at the whole rather than the parts:

Realize something: there is no binary [between developing skills for interdependence or developing cultural capital]. It is an imaginary divide, a remnant of postcolonial thinking. To be literal in this way is killing us. We have to be more contextual [grounded in a setting], and simultaneously more metaphorical—that is what can help us describe what is really going on and know how to respond.

Aunty Iwi was inviting Lani and Mark to MAKAWALU as a strategy to let go of the dichotomies that they were both projecting onto their perceived reality—MAKAWALU served as a strategy for getting clearer about the meaning of pedagogical choices when navigating difficult personal decisions.

HIMENI teachers often challenged one another to stretch beyond their accustomed habits of thinking, particularly when it came to perceived dichotomies between ka‘ikena Hawai‘i (Hawaiian ways) and conventional education practices. On a different occasion, Kaleionaona spoke directly about this issue, saying:

The rate of change in our world is taking us beyond binaries. The world is no longer either/or, we must embody our worldview and engage in practices that allow “both/and” thinking to flourish. Who are we to say what the difference is between a scientist [who measures] and a fisherman [who observes], if we are looking from the “both/and” Hawaiian indigenous point of view?
Months earlier, Lani, describing the essential characteristics of Hawaiian teaching wrote that, in her view, an essential key was: “It’s not ‘Either/Or,’ it’s ‘And’ for Hawaiian education.”

The repeated appearance of this “both/and” aspect of MAKAWALU shows how HIMENI teachers were indeed aware of the importance of being able to hold multiple, contradictory points of view with acceptance. They aspired to embody this stance, even when personal affiliation suggested strong attachment to a particular position, or they found themselves uncomfortable with the implications of the multiplicity.

Hawaiian perspectives as revealed in chant and story (like “Ka Moʻolelo of Hiʻiakaikapoliʻopule,” translated by Nogelmeier, 2006) make it clear that what “is” depends on context and point of view. Every perspective is an embodied one, and every standpoint can represent its perspective uniquely. A particular state and the opposite state can coexist as simultaneous aspects of reality, because ultimately those states will prove to be interdependent, as all realms are. The ability to be comfortable holding both polarities of a dichotomy as equally present truths was a challenge that HIMENI teachers encouraged one another to cultivate and reflect in their teaching practice.

HIMENI teachers spoke at length about the pedagogical inspiration they found in the story of Donald Swanson, a geologist who found a way to MAKAWALU as he sought to unravel the mystery of the timing and sequence of a series of eruptions at Kīlauea Volcano on Hawaiʻi Island. Unable to piece together the geological information available about eruptions from the period 1400-1800, Swanson looked
beyond his familiar scientific paradigm and opened up to the alternative framework of understanding told within Hawaiian moʻolelo [myth and legend]. After studying in detail the stories of mythical figures Hiʻiakaikapiolele and her sister Pele, Swanson developed a metaphorical interpretation of the episodic story. His interpretation was based on the foundational assumption that the goddesses’ acts corresponded with actual events in the island’s natural history. Tests of his scientific interpretation of the oral tradition revealed that this approach yielded a far better explanation of the geological data than what vulcanologists had been able to generate on their own (Swanson, 2008, 2010).

Through this willingness to assume a perspective outside his customary scientific lens, Swanson was able to interpret mythically-structured information that had been available in plain sight for a hundred years. Ultimately, Swanson’s finding led to a great improvement in the accuracy of the scientific narrative—improvements made possible because of the sophisticated observations and accurate mechanisms of cultural transmission employed by the Hawaiian kūpuna over generations. Swanson’s process shows how the presence of epistemological diversity can contribute value to an existing knowledge tradition; this story was cited by HIMENI teachers as an example of the kinds of value that come from MAKAWALU.

The importance of this second aspect of MAKAWALU became visible in schools’ various learning ecologies in the form of HIMENI teachers’ cultural construction of their “role” as teachers. Rather than seeing themselves as the kumu or source of knowledge, some HIMENI teachers positioned themselves as dedicated

---

54 A majority of HIMENI teachers chose not to have their students refer to them as kumu (teacher, or source) when in the learning environment; they had various explanations/reasons for this, but many
professionals who were actively engaged in learning—from places, from parents, from community members, from their own private or shared failures, and from their students as well. Challenging the conventional notion of teachers as the ones who must have “the” answer, these teachers framed their approach as a process in which they were simultaneously helping their students learn, learning from their students, learning about their students, and learning about their own professional practice.

Publicly revealing her perspective about the ideal role of a teacher, Lani posted an online photograph of herself with students at a wahi pana, captioned: “The best classroom in the world! The place does the teaching; I just make introductions.” Lani, along with many of her HIMENI colleagues, chose not to participate in the standard scripts for teacher/student power in school;\(^5\) they had a somewhat “distributed” notion of where knowledge and intelligence comes from (similar to Pea, 1993). The most valuable knowledge for their students to gain wasn’t purely that information in the teachers’ heads, but rather in learning contexts where opportunities to build new understanding were embedded in the relationships with akua, kānaka and ʻāina, as well as in the surrounding natural elements of wind, water and such.

This concept of fluid teaching that includes both ‘teaching and learning’ is reflected in the traditional Hawaiian proverb “aʻo aku, aʻo mai,” which points toward the fluidity and alternation between the experience of learning and teaching. From a Hawaiian perspective it is pololei (correct) that regularly, the teacher learns and the learner teaches.

---

\(^5\) In other words, they chose not to locate themselves at either end of the artificial binaries that they’d been presented with during their time as students in schools: enforcer/resister, decider/follower, teller/listener etc.
From her perspective as a *kumu hula*, Dr. Pualani Kanakaʻole Kanahele describes this dynamic:

Sometimes when you look at this delineation between students and teachers, there is not really any boundary. Sometimes it spills over and you don’t know when a student becomes a teacher, or a teacher becomes a student. That is what it’s all about. It’s about always knowing that you have something to learn…What it’s all about is this evolution, this continuing. (Kanahele, 2005, p. 24)

Kanahele’s observation parallels the findings of Jean Lave’s decades of research on cognitive apprenticeship (2011). Lave notes that while she used to think about apprenticeship as “someone who doesn’t “know” something, learning from someone who does,” (p. 156) she now encourages those studying learning to think differently about apprenticeship, and to frame it more precisely as simply “a process of changing practice” (p. 156). Some people believe that “to learn to do what you are already doing is a contradiction in terms” (p. 156), but such a notion is a fundamentally Hawaiian concept: you both know and are humbled by what you don’t know, simultaneously.

Lave encourages us to get comfortable with this same notion based on her research with tailors in Liberia; her study suggests that the model of simultaneous relationality between ‘knowing and not knowing’ is a far more precise description of the embodied reality of learning a binary view of “knowing” or “not knowing” is likely to be (p. 156). Holding the perspective of simultaneity:

implies that there is always more than one relation of knowing and doing in play— knowing and not knowing, doing and undoing, understanding theoretically but not empirically and vice versa, starting from both ends… (Lave, 2011, p. 156).
Such a description is well-aligned with the HIMENI teachers’ conception of their role. Lave’s findings articulate from a different point of view what Hawaiian elders knew and HIMENI teachers embody: that both “knowing” and “not knowing” are fundamental for a pono practice of teaching/learning.

Writing about the force within learning contexts that mutually influences teacher and student alike, Kaleionaona invoked the proverb “a’o aku, a’o mai,” and went on to offer her thoughts, saying:

There is reciprocity in learning at all times between student and teacher, making the very labels themselves deceiving.

The truth is that while we help our students along their own paths, we are simultaneously taking a journey of our own that is illuminated through their relationship with us.

Our abilities as “teachers” are indeed ultimately revealed through what is gained by our students…

This model of “reciprocity in learning” between teacher and student stands in notable contrast to the part teachers are expected to play in conventional schools. HIMENI teachers have found ways to inhabit the “teacher” role while being fundamentally and visibly a learner—discovering new places, building new relationships and vocabulary, and participating in community events such as hula or song contests that reveal them not to be the source of all knowledge.\

Exposing one’s vulnerabilities and growth edges has clear benefit for

---

56 This is coherent with the oft-cited Hawaiian proverb “A’ohe pau ka ‘ike i ka hālau ho’okahi,” that explains “not all knowledge is learned in one school.” So too is it true that not all knowledge can be found from the single source of knowledge that is a teacher. To avoid misconceptions, it must be noted here that in practice, this orientation does not inhibit the formation of lifelong teacher-and-student relationships or hālau-and-haumāna relationships—it merely frames them distinctively.
HIMENI teachers (as studies of adaptive expertise and creativity suggest to be true), yet doing so can be extremely uncomfortable in a setting where authoritativeness in voice and presentation is taken by peers, supervisors, parents and pupils alike, to signal professionalism.

A HIMENI teacher apprentices himself or herself to the context(s) for teaching, engaging fluidly in both knowing and not knowing. In so doing, s/he uncovers continuously over time what is required to reach desired outcomes— even as the learning ecology itself changes and grows. This aspect of MAKAWALU can be seen clearly in HIMENI teacher practice which values the ability to hold contrasting information side-by-side, and also evidences that their apprenticeship in teaching and learning happens from both directions, simultaneously.

**MAKAWALU Aspect 3: Need for learning experiences to have a function, outcome, or enduring waiwai that is valuable from multiple perspectives**

When it comes to debating curricular and pedagogical choices, the community of HIMENI teachers must reconcile their decisions reliably with the question of “No ke aha?” Why? What is the purpose? Why does this matter?

If a unit or lesson is worth teaching, then its effects may be seen in the ways that the students, the teacher, and the community are changed by the experience of learning—hopefully changed in a pono manner. If no function or purpose for the lesson can be found, the curricular ideas go no further. Reflection on the question of “No ke aha?” is a core, consistent aspect of HIMENI teachers’ practice of MAKAWALU.

The consistent push toward clarifying the explicit and implicit functions of learning experience is not simply a habit of the HIMENI community; it is a fundamentally Hawaiian notion: in order to have value, a thing must serve a function.

To offer a visual example of the strength of this preference in the Hawaiian tradition, we can look to the *wa’a*. Across Polynesia, voyaging canoes both modern and relic, are consistently built with ornamentation, sometimes elaborate, particularly upon the *manu* which are appointed at the front of each canoe. Herb Kawainui Kāne writes about how the Hawaiian canoe-building tradition did away with all physical parts of the canoe (including the decoration of the *manu*) that were not serving a specific purpose, excepting one single element:

Perhaps the only distinctive feature of Hawaiian canoes that may be considered non-functional (depending on how you think about ancestral spirits) is the slight projection of the hull from under the *manu* at the stern, called the *momoa*. One version of an ancient saga tells us that as a canoe was embarking on a voyage to Hawai‘i, a spirit announced his desire to go along. Informed by the chief that there was no room, the spirit leaped from shore to a small projection which he noticed at the stern, and rode there. That projection has become traditional in Hawaiian canoes, some say as a place where an invisible but benevolent ancestral spirit (‘*ʻaumakua* can ride)” (Kāne, 1998).

Kāne knows that the *momoa* is not structurally essential, but it is nonetheless serving an essential function. Many Hawaiians would argue that the cultivation of a ritual relationship with one’s own ‘*ʻaumakua* as a guide along the journey is a critical component for collective survival. To set sail without invoking the proper protocols could imperil the voyage from the start; the fact that the “invitation” to invoke that essential relationship with the realm of *akua* is made unforgettable and visible with the physical structure of the *momoa* can be read as evidence indeed of the functional
importance of being pono with akua, aina, and kanaka at every step along the journey.

Further evidence of this Hawaiian preference for the highly functional is the sizeable collection of ‘Ōlelo No’eau cultural proverbs in common use which exist only to scold and correct the functionless. The persistence of such a weighty collection of proverbs (used strategically to steer people away from transgression) makes clear the strong negative association placed upon those whose actions accomplish little or whose presence fulfilled limited purpose for their community.

Kamalu Poepoe introduces his “Systems and Ahupua’a” curriculum by proposing a set of standards for Hawaiian learning. In a preface introducing the standards, he explicitly points out that the value of knowledge increases when it is engaged:

In the Hawaiian way of thinking…acquiring information or skills [that are] personally relevant and serving a direct purpose has more meaning,” (Poepoe, 2009, p. 4).

Information is more highly valued if it can be connected to a context for use and engaged at higher-order levels of ‘ike (knowing) that include application and understanding. 58 As Kincheloe (2004) points out, even when conventional teachers choose simply to reproduce the strategies and methods provided by educational

---

58 Such a practical approach may be criticized for appearing to encourage limited horizons, but brief investigation shows that “Ua lehulehu a manomano ka ‘ikena a ka Hawai‘i”—great and numerous is the knowledge of the Hawaiians #2814 (Puku‘i, 1983, p. 309), and cultural horizons appear to be expansive indeed. Hawaiian traditions are consistently impressive in their scope and sophistication; consider, for example, the classificatory account of the origin of species appearing 100 years before Darwin’s (Kanahele, 1986, p. 240) or the feats of lo‘i hydroengineering and the ahupua’a & konohiki resource management systems that are restorative of ecological balance even in today’s extreme depletion. All of Polynesia knows the finest kapa of the Pacific comes from Hawai‘i (Neich & Pendergrast & Pfeiffer, 1997), the tradition of Ni’ihau shell lei treasured more than gold, and the lost art of makaloa mat weaving. Hawaiian innovators adapted sail designs to suit rough Hawaiian waters, and cultivated specialized strategies for competitive oration and family communication. Rather than inhibiting creativity, perhaps the insistence that everything must have a function may have contributed to the high standards for vision, execution, evolution and excellence in Hawai‘i.
researchers, all teachers invariably answer questions like these with their pedagogical decisions:

-what subject matter to teach;
-the proper way to develop a curriculum;
-the correct understanding of students;
-the right way to teach. (2004, p. 54)

However, not all teachers choose to be critically aware of such questions or to face them head-on the way that HIMENI teachers do as they actively MAKAWALU their curricular and pedagogical patterns of decision making. HIMENI teachers strive to create lessons that do more than just satisfy standards or deliver content, they aim to fulfill basic educational goals as well as to serve the purpose of connecting people with place and purpose, in ways that contribute to pono.

When asked to make a comprehensive list of things that characterize Hawaiian approaches to teaching and learning, HIMENI teachers included points like these which address their perception of a strong need to MAKAWALU for purposeful learning:

“In Hawaiian education, learning is integrated with life and applied right then and there. In Western education, knowledge is learned independent of context.”

“For us, things are taught in ways that can be applied in life right now. Learning is appropriate for the context.”

“We look for ways [that] assessment can be functional.”

“[One has to give] specific training for specific skills—‘ike and hana, that’s an ongoing movement. Knowledge isn’t just stacking up without application.”

These teachers see their task as one of encouraging their students’ learning by getting knowledge of content and lived experience to mutually inform one another.
This presents a pedagogical challenge for teachers as instructional designers because textbooks and resources rarely scaffold this; conventional professional development seminars are generally silent on this issue as well. HIMENI teachers have to MAKAWALU for themselves and along with one another as they develop plans, and use assessments creatively to determine whether the knowledge development they sought to stimulate is actually being integrated and applied in a manner that has meaningful purpose.

Curriculum planning process in conventional settings typically follows a sequence like this one, designed to guide teachers’ instructional planning as they integrate the Common Core State Standards:

1) Identify focus for lesson
2) Determine how learning will be assessed
3) Determine activities that will start lesson
4) Determine activities that will engage students in learning the content
5) Determine activities that will close lesson

In such a model, the initial focus for the lesson is determined by a teacher’s selection of grade-appropriate Common Core State Standards, rather than anything related to students or their context, and the teacher’s choices continue to unfold around this somewhat arbitrary selection from available options. Professionally-sound, “recommended” approaches fail to address HIMENI teachers’ essential criterion; they MAKAWALU, asking “No ke aha?” What purpose does it serve?

There are multiple levels at which a viable ‘purpose’ for instruction may be fulfilled, both seen and unseen. A specific skill may be taught, such as knowing how to read the phases of the moon in order to logically determine the best time to plant
sweet potato cuttings in the school’s malaʻai (garden). Another type of purpose is the production of an outcome with lasting impact, such as a hōʻike performance that shares knowledge with the community. Often, the creation of a durable product fulfills the demand for a purpose, for example, a field guide orienting visitors to Waipiʻo Valley about the rich natural and cultural heritage of that wahi pana. In the design of learning experiences, these types of educational ‘purpose’ require students to engage both academic content and applied context in an interdependent way. One additional dimension of purpose stands out which the HIMENI teachers determinedly pursue as they MAKAWALU: waiwai.

The concept of waiwai was introduced and discussed in Chapter 3, Fifth Session (at Ōʻōkala) section), as a kind of “true wealth” that goes beyond the monetary, and which provides collective value that transcends the individual’s role or experience. As interpreted by HIMENI teachers in their professional settings, educational waiwai taps into a sense of enduring value in the learning; something with the potential to bring about ʻike (understanding) that, by virtue of its worthiness to pass on, reaches beyond the immediate, to span communities and generations. Speaking to his colleagues, Lauloa articulated their shared professional challenge: “We must ask ourselves, ‘What is really waiwai for them [the students] to do, to learn and [to] pass on?’”

Kalalea’s process of MAKAWALU led her to develop a curriculum that proved to have an enduring waiwai which became uniquely visible only when her trajectory as a HIMENI teacher took an unexpected turn. Kalalea’s story gives us an example of how the waiwai of a curriculum can endure and transcend the particularity
of a learning context even as it is fully embedded within one.

After two years of working with middle school students at Punahele School, Kalalea felt that she was getting up to speed as a teacher. After teaching mostly other peoples’ curriculum in her first year, she felt excited to have successfully developed and taught a semester of natural science curriculum on the *Kumulipo*, a Hawaiian creation chant that lays out relationships between the species in a comprehensive, systematic classification that is wholly Hawaiian (Liliʻuokalani, 1897; Beckwith, 1951/1981). Kalalea’s seventh and eighth grade students observed, investigated and creatively interpreted the correspondences between species across the *ahupuaʻa*, from *mauka* (mountain uplands) to *makai* (lowlands and the sea).

In Punahele’s place-based learning contexts, Kalalea was free to teach in a transdisciplinary way; she learned by watching the unfolding of her students’ insights as they practiced the craft of scientific illustration, created *nāne* riddles about each species, and wrote poetry describing the relationships they identified. At the end-of-quarter *Hui ʻOhana* (schoolwide gathering for family and community), her students shared the products of their learning and everyone was impressed with how they had been able to develop their expertise within the scientific knowledge system and the Hawaiian knowledge system at the same time.

Due to family considerations, Kalalea chose to leave Punahele School at the end of her second year. She moved to a different island to be closer to her ʻohana, and was able to get a job teaching at a newly-opening ʻŌlelo Hawaiʻi immersion preschool— one that soon developed its own interpretation of HIMENI principles and practices. Since the program was just starting out, curriculum development was a huge
need. Kalalea jumped in, building upon what she had learned in her experiences with middle school science students, and adapting elements of the *Kumulipo* curriculum for these students who were extremely different in age, ability and knowledge level from those she’d been teaching.

The *waiwai* of the original curriculum came from her previous students’ grasp of a Hawaiian understanding of relationships between organisms, within the cosmogonic genealogy that the *Kumulipo* sets forth from the point of origin. Kalalea soon learned that, while the specific learning targets for preschool-age children were profoundly different, the *waiwai* about understanding our place in the cosmos by getting to know the organisms around us was essentially the same.

She assembled teaching resources and structured learning experiences in new ways that would address developmentally-appropriate benchmarks and standards. Though Kalalea’s lessons about *mauka/makai* correspondences in the *Kumulipo* were now taught at a different level and seen through a completely different lens, the essential kernel of meaning was sustained. Remarkably, Kalalea created a new path to the same *waiwai* which could be recognized as a valued outcome whether the learners were 3 years old, 13 years old or 93.

Kalalea originally began to MAKAWALU during her lesson planning at Punahele School with the question: “How do I teach the *waiwai* that is going to be most meaningful for my students?” She found a solution, one that held its value even after she transitioned from one school to the other; her professional discernment about the most important *waiwai* didn’t change, even as her teaching context changed profoundly.
A great deal was different for Kalalea at her new school. Not only did she teach in another language, there were differences in student developmental goals, academic vocabulary, classroom management strategies, guidance of social-emotional learning, instructional language, and even interactions with parents. Her conception of the factors in the teaching context which affected her students’ growth within the learning ecology shifted dramatically, yet her sense of the essentials required for effective teaching in a Hawaiian context remained steadfast.

Kalalea’s story presents an example of how the practice of MAKAWALU enabled one teacher to find a curricular focus that held its meaning robustly across age levels, and from the perspectives of parents, students and staff at two very different schools. Kalalea’s experience demonstrates what teachers can accomplish when their professional training sets them on a developmental trajectory with tools and mindsets to become an “apprentice of context” in every setting for teaching and learning they may encounter.

Kalalea’s conception of her role as a continuously-learning teacher prepared her to enter the new school and actively gather information about what her preschool students would need from the learning context in order to build rich and robust connections that would develop their ‘ike (understanding) beyond current levels. Not only did Kalalea continue her practice of MAKAWALU, she made it part of her curriculum to actively guide her students to makawalu for themselves— to see links between information across domains (mauka/makai) and apply that knowledge in multiple ways to achieve the outcome of better understanding their own place in the world.
Reflecting on the experience of the unexpected elements in teaching, Kaleionaona described explicitly how, in all learning, there must be some *waiwai* of true value that the learner can affiliate with if learning is going to be purposeful. She argued that this is of particular importance in place-based learning because for that method to be done correctly, learning experiences must be infused with an ethos that:

when fully realized, pervades and lends purpose to all chosen methodologies. It is rooted in an experience-driven, intimate understanding of a place—the margins of which expand infinitely with the growing awareness of the learner.

Kaleionaona is saying that if lessons can be connected to both purpose and place, the capacity for knowledge development is unbounded. Complex digital technologies are not needed to find “the world in a grain of sand” when this fundamental learning technology of place, purpose and relationships is active.

Kaleionaona’s words add an important new facet to our understanding of what constitutes *waiwai* in learning settings:

Place based learning inherently draws from the annals of human experience in a given place, and extends into its projected future, but it does so through a deeply felt understanding of the conditions of the present. The understanding must be a felt one, meaning that a palpable empathy for the place must be cultivated, or understanding and reciprocity with the learning environment will lack true purpose. Discourse and intellectual applications within the context of a place may serve to deepen, clarify and reaffirm this understanding, but can never be its source.

Kaleionaona is arguing here for learning and teaching to be enmeshed within the process of developing kinship with a place—a kinship or familial relationship that comes with responsibility to the land and the knowledge you carry about it.

As an aspect of MAKAWALU, incorporating *waiwai* or enduring value in
education is ultimately about more than just embedding an application, function, real-world outcome or meaningful purpose within a curricular design. Teaching with a commitment to waiwai means that both teachers and students are learning to become engaged in the ongoing act of locating themselves in the network of relationships and responsibilities that gives meaning to knowledge, and gives significance to one’s place in the world.

The HIMENI teachers have pioneered this practice of MAKAWALU, and while it may initially seem out of reach for conventional teachers to create curriculum that cultivates a matrix of relationship, responsibility and purpose, the HIMENI teachers’ experiences testify that integrating content, context and meaning has set them upon a worthwhile journey.

Discussion: MAKAWALU

As a theme, MAKAWALU describes three fundamental aspects of HIMENI teacher practice, all having to do with the value gained by “looking” at a situation from multiple perspectives across points of view and across time. As a cultural value, makawalu is seen as a very important practice for driving growth at any stage of life; HIMENI teachers see it as both a teaching strategy and a valued characteristic of student reflection.

The researchers Kincheloe and Steinberg (2008) summarize their experience of what can happen when teachers take perspectives that are different from their own, and establish a “multilogical”\(^{59}\) perspective that encompasses many points of view:

\(^{59}\) Multilogical is a term used by Kincheloe and Steinberg (2008) to refer to a point of view that is “complex,” allowing for multiple causations and the possibility of differening vantage points from
they come to value and thus pursue new frames of reference in regard to their students, classrooms, and workplaces…critical multilogical teachers begin to look at lessons from the perspectives of individuals from different race, class, gender and sexual orientations. They study the perspectives their indigenous, African American, Latino, White, poor and wealthy students bring to their classrooms. They are dedicated to the search for new perspectives… In such a process, subjugated and indigenous knowledges once again emerge allowing teachers to gain the cognitive power of empathy—a power that enables them to take pictures of reality from different vantage points (Kincheloe & Steinberg, 2008, p. 139).

Kincheloe and Steinberg suggest that education could benefit vastly if teachers adopt the multilogical stance— an orientation that clearly parallels HIMENI teachers’
cultivation of the first two aspects of the MAKAWALU theme: seeking multiple points perspectives as part of decision making, and simultaneously occupying multiple points of view.

The third aspect of the MAKAWALU theme differs somewhat from Kincheloe and Steinberg’s concept because it extends beyond empathy-as-perspective-taking, and expands to include empathy as a ground for relationship with other points of view. This aspect of MAKAWALU engages an ethic of caring (Noddings, 2003) and stretches even farther to include kinship and interdependence.

Experiences must have a clear function, real-world outcome, or waiwai in order to stimulate development of a learner’s actual network of interdependent relations. Part of the insistence in on every step having real value is that Hawaiian education cares deeply the development of relationality, which cannot be developed outside the context of context itself. While knowledge development activities in

which to view a phenomenon” (p. 138). “A multilogical epistemology and ontology promotes a spatial distancing from reality that allows an observer diverse frames of reference.” As a term, ‘multilogical’ is a useful word for describing one of the outcomes that a generative praxis may promote in teachers.
school and out are intended to teach specific skills and promote retention and transfer, from a Hawaiian perspective, they must also invoke value because part of their full purpose is to develop and grow networks of meaning. When knowledge is built through the process of *makawalu*, it is multilayered, interwoven with the filaments of experience from multiple points of view, and theories/hypotheses that have been activated on the basis of patterns in diverse situations.

Knowledge that emerges from such a process of self-aware positioning, from multiple points of view and from highly-contextualized place-based experiences may in fact be structured differently than knowledge that is built as if it were a stack of bricks, each one added on top of the other. Barnett and Koslowski (2002) remind us that:

> in many areas, expert reasoning shows evidence of deeper processing, suggesting a more causally interconnected, and more theoretical or abstract, knowledge-base (p. 247)... Theory based reasoning helps transfer expertise to a novel problem (p. 255).

When HIMENI teachers persist and prioritize the embedding of learning in contexts with enduring meaning, they set up the foundational conditions for students to develop the kinds of theory-based reasoning that comes from processing information across diverse contexts (Barnett & Koslowski, 2002; Voss et al., 1983). Teaching from a place of *waiwai* creates an interconnected network of meaning that embeds information and problem-solving strategies in a matrix of relationality—one that contributes “positional” meaning to memories and experiences so that each one is linked to and evoked by many other points of information and significance.
Consider the following math problem from Kaomea 2011) adapted from a curriculum entitled “Cycles and Hawaiian Traditions” (Poepoe, 2009):

**Moi Fishing in Ka Wā Kahiko**

Imagine that you are a lawai’a (fisherman) living in ka wā kahiko (ancient times). Your kuleana (responsibility) is to catch moi (threadfish) for the ali’i (chief). Moi is a reef fish that is best caught during low tide. You need to plan your fishing carefully because moi are rare fish that are fairly difficult to find. You must find the best time for catching moi while being careful not to disturb the moi’s spawning cycle so that they can reproduce and replenish.

It is now the first day of Nana, and you will need to bring moi to the ali’i once a month for the next 3 months (through Ikiiki). Using the relevant season, moon, and tide data from your local Hawaiian moon calendar and a local tide chart, follow the steps below to select the 3 best days (or nights) and times to fish for moi within the months of Nana, Welo, and Ikiiki (Kaomea, 2011, p. 294).

Kaomea provides an additional explanation:

This lesson provides students with problem-solving experiences in data analysis while simultaneously giving them a glimpse into the complex moon and season cycles that were central to the planning and practice of traditional Hawaiian conservation fishing. Students are challenged to analyze, interpret, and juxtapose data from both a local Hawaiian moon calendar and a local tide chart, and they are encouraged to make and justify predictions based on the data. (Kaomea, 2011, p. 295)

Contrast this with a mathematical story problem that asks students to “solve for x,” a missing variable, based on a known algorithm. If all of the data necessary to find the correct solution is available, the thinking skills are essentially the same, though in Kaomea’s example students are asked to justify the answer as well. Certain variables are known and their value must be equalized/fulfilled (moi delivered to the ali‘i), and certain conditions avoided (illegal operations, unbalanced equations, diminishing the moi spawning stock) while the unknown variable must be found. In solving the
mathematical story problem, students build knowledge in relationship to the
algorithm, yet do not connect that discrete piece of information with prior experience.

The type of decontextualized knowledge structure this builds over time creates
patterns in how knowledge is accessed and triggered when solving complex or ill-
structured problems; this is illustrated in Figure 7.

![Diagram of knowledge structure and complex or ill-structured problem]

**Figure 7.** Visualization of a knowledge structure that is decontextualized, suggesting
limited accessibility for problem solving.

In the *moi* problem, students are primed at every turn to make connections and
look for information within the context that will help them come up with an optimal
solution.

After spending three months studying the moon and its aspects of relationship
to traditional Hawaiian life, a learner would be primed to recollect astronomical,
biological, social/cultural and mathematical content by many surrounding stimuli, such as the tides, the wind direction, and even the month of the year. The networks of knowledge built in relationship to learning experiences become a resource to draw upon when facing the ill-structured problems of life. When they MAKAWALU to solve complex problems, Hawaiian kumu and haumāna search for answers broadly--across the past, present and future of Hawaiʻinuiākea— and in the mathematical algorithms and in the voices of ancestors alike.

When waiwai is present and learning is contextualized, the features and settings of daily life can become triggers for recall of recent learning experiences. This pattern has also been observed in in other settings, as noted by Schwartz and Martin (2004) who find that “the advantage of encouraging original student production [of answers to novel problems] is that it prepares students for subsequent learning (p. 168).

Figure 8 (below) represents the type of interdependent knowledge structure that can be built when knowledge development is highly contextualized. This kind of “network of meaning” knowledge structure can be built by learners who engage in highly-contextualized and immersive learning experiences. This structure may suggest increased accessibility for problem solving.
One of the HIMENI teachers’ explicit critiques of the conventional system is the problem of decontextualization. For them, decontextualizing knowledge is effectively taking away the opportunity to build the networks of meaning which are a key resource in 1) knowledge construction, 2) knowledge retrieval for application and 3) knowledge transfer for adaptive problem-solving in known and unknown domains.

While Schwartz, Chase & Bransford, (2012) suggest that there are perils to highly contextualizing learning all the time because it can limit transfer or stimulate “overzealous” transfer, it seems unlikely that the HIMENI teachers risk leading their students astray in that regard. By requiring theory-based reasoning in combination with highly contextualized experience, HIMENI students may get the ‘best of both worlds.’
Ongoing reinforcement makes specific information available along multiple pathways: knowledge about preserving species by sparing fish spawn stock connects to knowledge about how certain days of the month are better for fishing, which connects to awareness of the moon’s effects on planting, and harvesting… and so on. Similar matrices of meaning could be made surrounding less cultural topics such as measuring runoff from blacktop parking lot structures, or logging the relationship between golf course fertilizer application and invasive species populations in the local bay; even the grocery store can be fertile ground for waiwai studies about farming and food security.

If we assume that structures of knowledge are built in coherence with the way that knowledge is acquired (Bruner, 1985; Vygotsky, 1978), then perhaps what we are seeing in this third aspect of MAKAWALU is simply a different type of pattern for knowledge structure. Due to the abundant links made with each piece of information, knowledge may become more accessible and available for adaptive solution building in response to the “messy” complex or ill-structured problem spaces of life.
MAKAʻALA

ma.ka.a.la

adj. Awake; watchful; vigilant (Pukuʻi & Elbert, 1957).

As described in the following ‘Ōlelo Noʻeau, the practice of makaʻala is a very important element in the process of achieving one’s aims.

Makaʻala ke kanaka kāhea manu.
A man who calls birds should always be alert.
One who wishes to succeed should be alert to every opportunity, like one who catches birds by imitating their cries.
#2087 (Pukuʻi & Elbert, 1957, p. 227)

In the days of old Hawaiʻi, the kanaka kāhea manu (the person who calls birds) had a very important task. Using a delicate handheld snare spread with light gum adhesive from a sticky plant sap, the bird catcher (kia manu) would briefly capture the native birds of Hawaiʻi, pull a few red or yellow feathers, then release each bird. Thousands of these tiny feathers were in turn woven into lei (garlands), headpieces, kāhili (feather standards) or feathered capes that were the high-status symbols of the aliʻi. Should the kanaka kāhea manu make his calls and lose focus at the moment of the birds’ arrival, his time would be wasted.

Conceptually this notion of makaʻala is very straightforward: vigilance is a necessary part of receiving the gifts that are given in each moment. During a moment of distraction, the treasured reminiscence of a kupuna could be missed and the kaona (hidden meaning) of her tale lost for the future generation; a hoʻailona (sign) in the clouds might go unseen—its guidance offered but unheeded. Makaʻala can be a way of listening, a way of receiving, and also a way of behaving that reveals in every step
one’s gratitude for the abundance of life that flows within the *honua* (world).

*Maka‘ala* may be so frequently observed in a particular person’s behavior that the person comes to be described as actually **being maka‘ala**.

The word *maka‘ala* may also be used in the imperative call to “Pay attention!” or, to make sure you don’t receive something you wouldn’t want: “*E maka‘ala!*” one friend might shout to another just as a branch cracks and falls along the path. *Maka‘ala*, then, can describe both an act and a quality of vigilant attention that bears its own fruit in every situation.

Describing the particular type of intelligence he calls “mindfulness,” Mike Rose provides an excellent definition of what it can mean to *maka‘ala*:

> [embody] a heightened state and a comprehensiveness, an apprehension of the “big picture” mentioned earlier, and as well, a cueing toward particulars, and a vigilance for aberration (Rose, 2004, p. 24).

Incorporating the cultural value of *maka‘ala* in their professional contexts, the HIMENI teachers interpreted and extended this concept in their work, charting new territory and giving us the following three aspects of MAKA‘ALA as a theme borne out in HIMENI teacher practice.

<table>
<thead>
<tr>
<th>HIMENI teachers’ use of MAKA‘ALA as a theme included:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAKA‘ALA Aspect 1</strong></td>
<td>State of being vigilant; on the watch</td>
</tr>
<tr>
<td><strong>MAKA‘ALA Aspect 2</strong></td>
<td>Noticing contextual factors and observing (or gathering information about) patterns</td>
</tr>
<tr>
<td><strong>MAKA‘ALA Aspect 3</strong></td>
<td>Adjusting mental models to incorporate new data gathered from teaching in a learning ecology</td>
</tr>
</tbody>
</table>
MAKA‘ALA Aspect 1: State of being vigilant; on the watch

The teacher who is maka ‘ala is an active seeker of new inputs; ready to receive, and ready to respond to that new information. Pōhina told the story in an interview of how she accompanied a group of students on a trip to the Honolulu Museum of Art. The group spread out through the maze of the museum, and she hung back with a few of the students who were “high fliers” who often had behavioral issues. One of the students surprised her:

He starts assessing this painting… he’s sounding like a jazz artist as he is describing it. I had no idea he was capable of that. He says, “I love art, Aunty!” and explains that his uncle is an artist. He’s talking to himself as we wander through the museum, and the other students are drawn to him, to hear to what he is saying. He’s writing down all of these hybolical\textsuperscript{60} [complicated] words in his journal. He cannot communicate because he’s so absorbed in the lines, the expressions, the shadings. At some point he says to me “Aunty, come and look at this drawing. Tell me what you think this drawing is trying to say.”

Pōhina described the feeling of digging frantically through her thoughts trying to come up with something to say to impress this “special education” student. She was overcome with both disbelief and awe at the discrepancy between her expectations and his extraordinary gifts. That instant stands out “to this day” in Pōhina’s mind as a high-impact maka ‘ala moment. She saw this as both an invitation and a challenge to her own creativity as a teacher because she knew that, “If I was ever going to reach this particular student in the future, here was the way!” She witnessed him change before her eyes from ‘troublemaker’ to child of infinite potential; she came to see him as like the seed of the great koa tree:

\textsuperscript{60} The word ‘hybolical’ is used in Pidgin (Hawaiian Creole English) to connote something that is unnecessarily complex or inaccessibly wordy.
Such a seed can lie on fertile ground for years and will never grow; before it can germinate, it must first be activated by having its outer seed coat scraped.

Pōhina asked, “How do we get teachers to do that? Everyday, every teacher has to be really looking,” searching for that way to scrape the seed coat and activate the students, to reach them. She wondered:

Are we training all teachers to look for that? Are we excluding other things by focusing only on certain things that we already recognize [as] being of value?

If we aren’t looking for that, then [as teachers] we are taking them away from their passion and interest. What is going on with [an] educational system…if we don’t nurture that passion, and bring forth the vitalization that is inside each one of them?

The makaʻala that Pōhina experienced took place in an instant, yet it gave rise to an insight that forever changed her view of student potential, and had a lasting effect on her pedagogy as well.

This unveils another dimension of what makaʻala came to connote for the HIMENI teachers: insight, the reward of vigilance. Within the vernacular of Kulanui Aʻo, the teachers began to speak about “having a makaʻala” as if it were a thing, like an “a-ha” realization— the moment of having their eyes opened to something grippingly fundamental in the teaching context that they’d never seen before.

This use of the word makaʻala was consistent with its general meaning, but as applied specifically by the HIMENI teachers, it seemed to connote the noticing of new factors in and around the teaching context— factors that had a direct influence on students’ learning or some impact on decision-making in professional practice.
MAKAʻALA Aspect 2: Noticing contextual factors and observing (or gathering information about) patterns

One evening in Kaʻū, we were eating dinner outside together on the lanai. The long table had been set beautifully by our host with candles and a centerpiece, but Kaʻōiwi was irritated by the fact that she couldn't see the face of the person across the table due to the large arrangement of flowers. She pushed the centerpiece to the left then suddenly grabbed it away with both hands, startled to discover she’d singed its wrapper over a candle. As other people arrived at the table with their plates of food, she would scoot the centerpiece inch by inch, with a wide berth around the candles, adjusting the position so that everyone could be seen. The extreme care in her movements and her acute awareness of the location of each candle showed me in very simple terms what it meant to discover a new contextual feature in one’s environment.

Prior to the accidental burn, Kaʻōiwi had only been attending to two things: her friend’s face and the obstacle interfering. Once the centerpiece sent up a plume of smoke, Kaʻōiwi began to makaʻala; she took note of how it happened and became vigilantly attentive to the possibility of any future interaction between the centerpiece and the candle. From Kaʻōiwi’s perspective, the potential for flame was a “new contextual factor” in the table environment.

HIMENI teachers regularly identified new factors that had impact on interactions within the teaching context. Becoming aware of the influence of certain factors appeared to be the key to figuring out how to navigate things like time of day, season, community events prior to school, or upcoming after school day is finished, birth order of a student, certain ‘eʻepa (special) characteristics and the like. Once they
brought these new factors into the field of their awareness, the teachers sought to gather additional data through diverse forms of assessment. They were developing “professional vision” as Goodwin describes it (1994), yet doing so dynamically-- in a context that was always changing, as locations varied. Learning to look for these factors became as much a part of their practice as learning to work with the contextual factors that they already knew about.

Perhaps due to this dynamic nature of the learning ecology, HIMENI teachers sought actively to enrich data streams so that they could see more of what was going on in the environment by making patterns visible. As Kalalea put it: “We take note and document the positive and the negative, because that is how we learn.” Within that statement, we can see evidence of Kalalea’s habit of vigilance and big picture awareness; many of the HIMENI teachers reported looking for or finding tiny clues or inconsistencies that reveal more about the whole.61

Kalalea went on to comment later that in conventional education, teachers are required only to document the negative patterns in student interaction:

When you only do the one side [the negative], we are out of balance. We cannot only do the Western version of paperwork and referrals. We have to make room for the Hawaiian kūkākūkā and the hoʻoponopono. Nowadays, we need the combination of methods, not just one or the other.

The Hawaiian methods of communication and conflict resolution that Kalalea mentioned are significant since she sees them not only as a natural balance to the reporting and documenting required by many schools, but also as assessments. As a method for discussion, kūkākūkā (to discuss or negotiate) allows all perspectives in the

---

61 Attention to small inconsistencies is also important in Endsley’s conceptual framework for situation awareness (Endsley, 1995; Endsley, Bolté & Jones, 2003).
group to be heard, as does the method of ho’oponopono (to put in order, to correct). More than just positive problem-solving processes, these methods allow for increased insight by the teacher into the inner workings of the student ‘family’ as an element of the learning ecology.

One thing that marked the teachers’ use of assessment was how many different types and kinds of assessment they put into use—even though they still regularly discussed how they needed more assessments and better assessments. Better assessments meant better information about how their students were doing; thus HIMENI teachers spent a lot of time refining their instruments and envisioning what they wanted to try next. They sought to reach to a point professionally where they had their own portfolio of assessments, access to other diverse instruments, routines for frequent ‘temperature checks,’ and multiple types or approaches to assessment (such as formative/summative, contextualized/decontextualized, holistic/analytic etc.). Assessments helped them make improvements in the teaching cycle, but also were one of the ways in which they learned about new contextual factors in the learning environment as that ecology shifted. As shown in Endsley’s studies of situation awareness (1995, 2000; Endsley, Boltè & Jones, 2003), having multiple streams of information contributes to building an accurate picture of the scenario at hand—however, these teachers weren’t satisfied to have only assessment tools that would help them MAKA‘ALA content information; they wanted to go deeper and understand the broader contextual aspects of their students’ lives.

One of the assessments that they used was initially designed as a reflection log format for teachers, but a few started using it as an assessment to structure their own
students’ reflections and make new realizations visible. The original *Makaʻala Moment* Reflection Log used by teachers included the following four elements:

1) *Nānā ka maka, hoʻolohe ka pepeiao*… (Noticing/Observing)
   Lit.: looking with the eyes, listening with the ears…
   Fig.: sensing and perceiving

2) *Noʻonoʻo iho* (Interpretation)
   Lit.: digging (*iho*) for understanding
   Fig.: seeking insight

3) *Na mea waiwai i loko* (Significance/Application)
   Lit.: the thing of worth/enduring value within
   Fig.: the thing that mattered most to you which you’ll incorporate or take forward

4) *Nīnau aku, nīnau mai* (Questions?)
   Lit.: questions go, questions come
   Fig.: giving and receiving questions

It was through these written *Makaʻala Moment* Reflection Logs (MMLogs), which teachers would post on a discussion board or email out to their group, that the teachers shared their reflections. They consistently reported gaining benefits from hearing the reflections of others and the stories of what their peers went through, though it was challenging for some to find time to write reflectively.

The types of reflections most commonly heard were like these from Kūpono who realized the power of his own words in the classroom as a factor:

I want to be more conscious about differentiating and modifying my *leo* [voice], essentially being mindful of the words I release into the world… *Ka ʻōlelo no ke ola, i ka ʻōlelo no ka make* [Life is in speech; death is in speech. Words can heal; words can destroy. #1191, Pukuʻi, p. 129]. Words carry *mana* [life force; energy], *mana* to create and also to destroy. As a pedagogical practice, this simple phrase carries a great weight.

…I have tried to steer away from the “ultimate authority” style of instruction with varying degrees of success… How is my day going?
How much of myself do I have to give today? Who am I dealing with? What are my intentions? Am I trying to help, to encourage, to motivate, to push, to punish, to sympathize or to scare?

…I have noticed that they are responding to my instructions in a more timely fashion, and without too much [grumbling or complaining]. I’m removing the teeth from the shark, so to speak, and have witnessed recognizable growth. I think that my being much more patient…without being condescending, has improved my ability to get them to produce work. I am trying to understand that all my *haumāna* [students] are unique characters and need to be communicated to differently…

…I am trying to learn how to keep the *haumāna* moving forward without taking the wind out of their sails.

Every day I try to discard the methods that reap negative responses and allow myself to shape my ‘ōlelo [speech] toward life rather than death. *I ka ʻōlelo no ke ola, i ka ʻōlelo no ka make.*

The HIMENI teachers’ *Makaʻala Moment* Reflection Logs (MMLogs) all began with their notes on a specific incident or pattern of behavior they’d noticed, yet the reflections on significance the questions generally seemed to have a balance between emphasis on what was happening in their students’ process, and within their own professional practice. From time to time in the *hōʻike*, we would hear about how someone’s *makaʻala* (or one of their peers’ writings) had touched off a novel idea for something to “try with the kids,” or inspired a change in their own practice. Less frequently, teachers would report the results of a whole-scale shift that began with a simple investigation of a phenomenon they had noted. In some ways their MAKAʻALA and small-scale noticing of patterns was stimulating them to do what Schön called “experimentation” and “hypothesis testing.” Their reflection-in-action often led to stepwise adjustments as well as to complete new iterations. One might also argue that elements of data-driven forward reasoning (Patel & Groen, 1986;
Wineburg, 1998) were evident in teachers’ patterns of looking-through-assessing, albeit in a uniquely, context-sensitive application.

To illustrate the degree of sensitivity to contextual factors that was present among HIMENI teachers practicing MAKAʻALA, the case of Kekahi’s personal journey from observation to professional recommendation may be instructive.

During one Kulanui Aʻo session, the group had a visit from a parent who had, several months prior, made a commitment to speaking only the Hawaiian language at home with her three young boys. Kekahi had coordinated the guest speaker, and after her talk, he made this appeal to his peer group of teacher candidates: “[You heard her say] that when she was speaking in Hawaiian, she started thinking in Hawaiian… it made her a better parent because it made her more ʻoluʻolu (pleasant and kind) with her sons… We really need to makaʻala [see the pattern] of when we are using ʻŌlelo Hawaiʻi versus the English language to our haumāna [K-12 students] to communicate negative emotions in our classrooms.”

During the previous quarter, Kekahi had used qualitative methods to research and write a case study of this family, and he had come to the conclusion that the language in which an emotionally-charged message was delivered had an impact on the way that a young person’s connection to that language developed (Reigelhaupt & Carrasco, 2005). He interpreted this to mean that HIMENI teachers should begin to look at the pattern by which they were ‘binding’ language and emotional messages together, and try to makawalu to understand whether the pattern was valid and valuable when seen from multiple perspectives. For example, a teacher who speaks primarily English, but has a habit (in response to inconvenient student behaviors) of
shouting Hawaiian commands with strong emotional overtones like “Hāmau!” (Silence!) or “Ua lawa!” (That’s enough!) may or may not be aware of the nuanced message s/he is communicating to a person who is just beginning to weave the sophisticated and precious net of associations in the ʻōlelo makuahine (mother tongue).

Kekahi’s inquiry, through the lens of the experience of his case study family, began with perspective-taking and empathy, and he was able to sketch out the functioning of a contextual factor that he hadn’t been aware of before—eventually watching it play out in his own practice. He felt strongly that this factor should be considered as a potentially critical issue by any teacher working in the microcontext of a school learning environment where both languages are used. By inviting his case study family to speak to his cohort of teacher candidates, Kekahi sought to make visible the pattern that he had seen, in order to awaken others to the possibility that this type of pattern could warrant consideration in their own teaching practice.

After writing a Makaʻala Moment Reflection Log about his bilingual teaching practices, Kekahi posed these questions to the group as an invitation for them to examine their own patterns of language use in the classroom and the possible impacts of those choices:

*Nā Nīnaʻau (Questions)*

1) Does what language you choose to [speak in] about certain phenomena in class have an impact on the way you view situations in your classroom?
2) Does your attitude and tone change when dealing with students if [you are] using a Hawaiian world-view vs. a Western world-view?
3) Does the way [you] treat a difficult student in class change depending on the cultural framework?
It is important to note here that Kekahi’s call to action was not structured in the form of a generalized ‘recommendation’ regarding his fellow teacher candidates’ use of English (such as: “acceptable for expressing both negative and positive feedback”) or Hawaiian (such as: “acceptable only for positive feedback”). Rather, he called passionately upon his peers to makaʻala how this factor functioned in their contexts—not merely to follow after the pedagogical decision he had made to challenge the habitual patterns he had unconsciously enacted when making spontaneous decisions about dual language use. By virtue of his request, Kekahi was asking them not only to makaʻala, but to makawalu as well: to look deeply for patterns in their own practice and patterns present in their teaching contexts, and to evaluate how those patterns were serving the students, the community and the future of the Hawaiian language.

In Kekahi’s encouragement of his colleagues to examine their default patterns of dual language use, he was pointing to an important contextual factor that they may or may not have been previously aware of as an influence on student construction of meaning. Some teacher candidates had indeed detected this factor and were already considering its function within the scope of their professional vision; others recognized it immediately upon seeing it highlighted in this family’s experience. Over the following weeks of teaching, Kekahi’s peers began to alternately makaʻala and makawalu to see the patterns by which dual language use was operating in their own practice, and in their schools. Considering that pattern of practice from multiple perspectives, each teacher assessed for him or herself whether this contextual factor was being negotiated effectively for the optimal growth of learners’ cultural dexterity and linguistic fluency in both ‘Ōlelo Hawaiʻi and ‘Ōlelo Pelekan (English).
Ongoing reflections on observation led Kekahi and many of his peers to attend to the spectrum of contextual factors that were influencing the learning ecology, including the “inner context” and the “outer context” of the learner. They made their own local inquiries and also probed one another about how those in other learning contexts handled factors like these:

- Community status
- Familial affiliation
- Gender identification, including non-gender-conforming
- Genealogy
- Birth order
- Relationship with peers
- Relationship with teachers, current and past
- Cultural patterns in logic and reasoning
- Roles, and appropriate behavior such as length of eye contact or permission to ask questions that is associated with a particular role
- Explicit conflict between practices at home vs. school (ex. sitting on the table)
- Useful contrasts that helped students accept changes between home and school
- Prior exposure to practices (ex. right-to-left reading)
- Language use (including worldview implicit in the language, emotional tone, content associations)

The teachers shared their reflections and expressed the benefits they gained from hearing the reflections of others; in some ways, Kulanui Aʻo gatherings gave them an opportunity to benefit from the narratives of others, and build that “substantive variability” which is so critical to developing adaptive expertise. Sherin and Van Es (2009) have also demonstrated that this type of shared, collective “noticing” can cultivate the growth of professional vision and support changes in “knowledge-based reasoning.” The changes that Sherin & Van Es observed took place across all three environments where they engaged with teachers, including the video club meetings where they commented on classroom events, in interviews, and in the

290
instructional environment (2009, p. 32). While this study did not make a formal investigation of the locations where MAKA‘ALA was reported, it does seem that those HIMENI Teachers who practiced MAKA‘ALA did so across all the school, program and research environments. It seems remarkable that the conclusions of Sherin and Van Es are also aligned closely with the pattern of MAKA‘ALA:

instead of trying to teach teachers how to deal with all possible contingencies, we focus on ways to help teachers better understand their learning environments…teachers’ changing practices are accompanied by new and enhanced teacher noticing, (Sherin, Jacobs & Phillip, 2010, p. 11).

As part of this aspect of MAKA‘ALA, HIMENI teachers not only developed enhanced noticing, they also identified explicit contextual factors as they became aware of them. Teachers also conducted small iterative “experiments” to learn more about factors their teaching contexts and developed assessments to make visible what they could not see by merely looking.
MAKAʻALA Aspect 3: Adjusting mental models to incorporate new data
gathered from cycles of teaching

Hiipoi told the story of how she had taken on a challenge presented by Aunty Iwi to “stretch her own edges” as a teacher. After taking some time to makawalu this question of where those ‘edges’ actually were, she became aware of a belief that she held— one that she wasn’t sure truly reflected the reality of her context for teaching. It seemed to her at the time that her students weren’t able to focus and concentrate enough to read a novel. She felt as if this was true, but she hadn’t ever given them a novel to read, and she realized that she didn’t actually know. Her pedagogical pattern as a history teacher was to give a short piece of text, a primary document, some data graphs, or to show a brief film clip to get the students talking about the historical content—then she would lay the lecture details on them and end with questions. She knew that her students were bright and capable, but she had never seen them as readers, partly because she was acutely aware of the issues some of them faced with interpreting English language. After taking time to MAKAʻALA her students’ abilities in other areas, Hiipoi acknowledged she was setting too low a standard for her students when it came to their reading abilities. She came to the conclusion that simply because she didn’t feel confident in guiding them through the process of reading a historical novel, it was not right to deny them opportunities to grow as critical readers.

The first novel Hiipoi selected for her students to read was “The True Story of Kaluaikoolau: As Told by His Wife Piilani” (Kaluaikoolau, 1906/2001). This was a story that all her students had heard told before because it was an actual story that had happened on their island over a hundred years ago. It was one of very few accounts
written by a Hawaiian person, and the book has both the original Hawaiian text and English text. She felt it would be accessible to them, and she was right; they responded with enthusiasm. Many of their family members had been involved in a community production of a community play based on Kaluaikoolau’s story some years back, so the students came to class every day ready to discuss and tell what parts their cousins had played in the dramatic tale. This 1893 narrative of a family that escapes capture when the authorities want to forcibly remove them from their homeland (to a leper’s colony) made an excellent platform for Hiipoi to talk about key historical events in that time period, and the many diseases that were affecting Hawaiian health at that time and up through the present. While they had many productive discussions, Hiipoi was not entirely convinced that her students had actually read this novel. She did pick up the idea of organizing each day’s discussion around a theme like “assent vs. resistance,” which formed the foundation for a connection between historical concepts and the novel.

Watching the students grasp the motifs of the book and relate them to popular movies they’d seen helped Hiipoi to challenge her “edge” and see that her students were very capable thinkers who could take the perspective of a historical or literary character and imagine issues or dynamics from that point of view.

The school had several class sets of Steinbeck’s “Of Mice and Men” which she resisted using because that book was written by an English-speaking author, set on a continent that most of her students had never been to, in an era that she suspected they had no personal or familial connection to. It was short, however, and Hiipoi introduced it to her students using the theme of “ignorance vs. innocence” which
connected to some of the issues that had been a part of the previous book. They developed some routines for literature circles where students could read and pose questions to one another. Soon the students were reading their Steinbeck books together in the classroom, both in groups and and independently. Hiipoi pushed the historical content forward, preparing graphics about how Hawaiian life, land distribution and health changed profoundly between 1890 and the 1940s when the two books had been set. She noticed that students really responded to the visuals she presented, and commented:

I like that they were pretty engaged in what was being presented. You could tell that they were engaged because of the questions that they posed. I didn’t have enough time to go into depth with the questions that they had asked! The multitude of questions that they had regarding the charts was a surprise. They wanted to discuss the charts a lot more than I had anticipated. I just wanted their initial reaction of the different types of health plights that Hawaiians were facing then, and still face today. They hear a lot about it, and this was a good way for them to see raw data—statistics that weren’t so biased, and opinionated as a lot of what is out there. They gave me their initial reaction on that.

Reflecting on how the direction of her curriculum had changed, Hiipoi described with enthusiasm how she had seen an opening up of students’ conversations and questions.

“We talked about how Hawaiians today are putting mea hewa [unhealthy foods and things] in their bodies because that is just what is available—that is what their families can afford.”

Hiipoi challenged them to consider whether there is really no other choice economically, or if the ʻaina and the subsistence foods of fishing and farming provide some choice? They discussed sensitive issues in a personal way:

“Have your family been innocent or ignorant in their decision making [about
health]?” The students use the novel as a framework to structure their comments.

At the end of the day, toward the end of the semester’s last unit, Hiipoi looked back and described how they’d wrap up the quarter:

Students are making a timeline on all of the different things that we’ve discussed this quarter and they’re going present it at the [Hui ‘Ohana] next Saturday. We’re going to work on a skit for the parents that brings in the themes in “Of Mice and Men.” Themes we’ve tried to emphasize [are] “innocence vs. ignorance” and “idealism vs. realism.” We talked about why putting mea hewa into our bodies can seem like the only realistic solution at the time. But that we can find ways to go beyond that [when we search for how] to be pono.

Hiipoi explained how in teaching this novel-based history curriculum her eyes had been opened:

I learned for the most part that most of them are interested in these issues; and that a lot of these issues are close to home. [I learned] that I definitely need to bring in more concrete examples to supplement the [historical charts and] data. And also I have to be more prepared for some of the questions that I thought they would have posed. That they did pose! I ran out of time. I thought this unit would have moved much faster. I didn’t expect as many questions.

Not only had Hiipoi seen that her students were capable readers – she now recognized they had curiosity and were somewhat proficient at managing thematic ideas intertextually between a book, historical events and their own lives. Hiipoi had also discovered that she was now able to anticipate and prepare for the kinds of questions they might ask—though she was generally surprised the intensity of their curiosity.

Her students went on to successfully read novels like “Lord of the Flies” and “Macbeth,” in conversation with history and political science content as they addressed the state standards for Social Studies.
Hiipoi began with reflection and looked at how her beliefs were imposing limits on her students; she tested the waters with the story of “Kaluaikoolau,” and saw that they enjoyed discussion and storytelling when there was something they could connect to. Having been able to MAKAʻALA that having a personal connection was essential for them, Hiipoi developed the themes as a way for students to engage. Watching with vigilance, she saw also that the quality of their questioning and their ability to grasp concepts was supported by the use of visual data—the kinds of mathematical representations that she knew she needed to bring to life with concrete examples and stories. Hiipoi had become aware of a new contextual factor in the learning ecology: her students’ ability to read and navigate intertextual conversations. She had been unwittingly scaffolding this beforehand with films, charts and primary texts, but her students’ discussions really took off when they were given the richness of a novel along with the thread of the themes to follow across different settings and time periods.

For her this was more than just a surprise; it was almost impossible to believe that she had been so far off the mark about what her students—the same stubborn ones she knew so well from math class—were able to accomplish. The discrepancy between her expectations and their capabilities had a transformative effect on Hiipoi. Witnessing their abilities as she tested and proved her own hypothesis (that novels were too much for these kids) to be wrong, Hiipoi radically altered her pedagogy and continued to reinvent the structure of the class from that point forward.

As a newcomer to teaching social studies, Hiipoi had little if any theoretical foundation in the discipline or pedagogical methods. She was creating and teaching
her classes one day at a time, based on what she had learned from assessments of student work the week before. Hiipoi was looking along the day-to-day horizon for “what worked” and getting from one proximal goal to the next, as she learned along with her students about how they responded to varying teaching strategies and techniques. Finding evidence that compelled her to challenge her assumption that their language ability hampered their reading and thinking skills, Hiipoi started to look beyond their responses and reactions, using a theory-based principle (knowledge that reading is an incredible asset) to guide her reach for a goal on the more distant horizon.

It was at this point that Hiipoi engaged the third aspect of MAKAʻALA, starting to allow information in the learning ecology to reshape her mental model. Prior to this, Hiipoi was learning about contextual factors that were relevant for her students like making links with the heritage language, attitudes toward written language, preferences for collaborative work over individual work, and the like. All of these contextual factors were informing different parts of her “mental model,” the internal representation of the learning ecology that helps teachers to filter information and organize it.

Mental models are considered to be a “cognitive structure” that helps people model and think through how things work in the world using analogical thinking (Collins & Gentner, 1987). When Hiipoi commented that she had been able to anticipate her students’ questions on the material, she was using her mental model of the learning ecology (including all the contextual factors she was aware of, like
personality, role in group, prior patterns of questioning etc.) to reason and predict what they might wonder about. Researchers recognize that mental models are:

context-dependent and may change according to the situation in which they are used...[they have to] adapt to continually changing circumstances and to evolve over time through learning. Conceptualizing cognitive representations as dynamic, inaccurate models of complex systems acknowledges the limitations in peoples’ ability to conceive such complex systems” (Jones et. al, 2011, p. 46-47).

Part of what these HIMENI teachers do when they apprentice themselves to a teaching context in a particular learning ecology could be called “cognitive mapping” which helps them identify, organize and recall information about the local contextual features that matters in the particular learning ecology where they work. Analogical thinking across domains is what helps people to “create new mental models that they can then run to generate predictions about what should happen in various situations in the world” (Collins & Gentner, 1987, p. 243).

When Hiipoi recognized an inconsistency in her mental model of the teaching context, she set about disproving the default hypothesis that her students couldn’t handle novels. This unconscious belief had been a part of her mental model of the teaching context, and after seeing that it wasn’t based on the current reality, she began structuring learning experiences for her students that would produce data to inform her new hypothesis: what might happen if students can work with literary texts to deepen their historical understandings?

Similarly to how development of professional vision helps teachers to see and grasp over time what has always been before their eyes, “the nature and richness of models one can construct and one’s ability to reason develops with learning domain-
specific content and techniques,” (Nersessian, 2002, p. 140). Background knowledge of contextual features (gained through MAKA‘ALA and assessment strategies) has a direct impact on the construction of the mental model, just as a person’s goals, motives, expectations and biases do.

**Discussion: MAKA‘ALA**

The HIMENI teachers referred to MAKA‘ALA as one of the ways in which they acquire the information needed in order to know how to change their teaching practices over time in alignment with learner/community needs. As vigilance, as reflection, as assessment data collection, and as an information stream that inspires stepwise modifications to the teachers’ mental models, MAKA‘ALA is one of the key themes that HIMENI teachers relied on to accurately apprehend and continuously improve their understanding of the learning ecology of which their teaching context is a part.

Visualized below in Figure 9, is a diagram representing the mutually-informative relationship between a teacher’s mental model of the learning ecology and the everyday practice of the teaching cycle.
Figure 9. Relationship between the teaching cycle (in generative praxis) and the continuously-developing mental model of the teaching context.

The darker outer arrows in Figure 9 represent the visible realm, encompassed by daily tasks of teaching: from the actual enactment and orchestration of learning experience to its assessment, evaluation, reflection and planning. The mental model of the learning ecology is at the center, helping the teacher to “describe, explain and predict a system’s purpose, form, function and state (Moray, 1998, p. 295). At every stage, there is an opportunity for the mental model to be influenced by new understandings, and for the mental model to inspire changes and adjustments in activity based on existing understandings. If none of the incidental influence takes place, the mental model of the learning ecology is still well-informed by the teaching
cycle through the stage of evaluation & reflection, when observations are synthesized and registered in relationship to the larger pattern over time.

A teacher who notices that, in his last teaching cycle, the students lost work time because they straggled in after break, may make a decision like “next time we have a break, I’m going to tell them the exact time when we reconvene rather than just saying we’ll take a 10 minute break.” This insight that “it may be important to give a specific return time to keep breaks brief” thus becomes part of corpus of that teacher’s background knowledge in the mental model. After experiencing several cycles of how well the “exact time” tactic works, it may become well-embedded within the mental model and other tactics may accumulate alongside it, (like one HIMENI teacher’s strategy to “have hōʻike sign-up sheets out on the table during break so that we don’t have to take five minutes for that at the end of class.”) The teacher clusters reasoning around the broader principle that “time can be lost or saved during transitions” which is based on sensitivity to the actual contextual feature of “transitions” as they occur in that particular learning ecology. A teacher has the choice to negotiate that contextual factor in any way that s/he chooses as long as s/he is aware of it; without that awareness, that factor is just another layer of complexity in the ill-structured problem of context that the teacher is trying to solve.
Discussion: Design Thinking and *MAKAWALU + MAKAʻALA*

These last two themes, MAKAWALU and MAKAʻALA, have origins in two distinct cultural values, yet they are observed as interdependent in teachers’ practices. Aspects of MAKAWALU and MAKAʻALA seem consistently to be in conversation with one another, appearing as alternating phases across all steps of the teaching and learning process.

The two themes are linked by the way that teachers seemed to apply them in an alternating fashion, for example, first noticing patterns in the teaching context (MAKAʻALA) and then trying to understand the implications of those patterns from multiple points of view (MAKAWALU). Or, beginning with the other theme, teachers enacted lesson plans designed to test or reveal how a pattern functions under new conditions (MAKAWALU), then sought to discern more deeply the nature of the pattern (MAKAʻALA) to understand how the pattern could be fully addressed or considered as a contextual factor in their developing approach to instructional design.

An experience shared by elementary teacher Lauloa and described in the following vignette illustrates one instance of the mutually informative back-and-forth relationship between the themes of MAKAWALU and MAKAʻALA.

Nāwao was ten years old when he came to Lauloa’s class from a neighboring public school. Lauloa taught third, fourth and fifth graders in a “looping” curriculum structure; he knew that encountering Nāwao as a fifth-grader meant there would be an adjustment period to get acquainted with class routines and this new way of learning from the land rather than just “bookwork.” Nāwao seemed to be a willing student, though he tended not to follow instructions promptly; he would wait and watch what
others did, then follow. After some weeks, Lauloa observed that Nāwao was participating well in class but rarely followed the homework instructions accurately. One morning, Lauloa overheard some students saying that Nāwao was a “stupid idiot.” He intervened in their conversation, but it left him wondering what brought about that talk, since Nāwao was generally kind and respectful—helpful to all. The discrepancy made Lauloa curious if there was something he might be missing about Nāwao (MAKAʻALA). He decided to watch the students carefully as they transitioned out to recess and lunch that day; on the playground, he kept an eye on Nāwao for any clues (MAKAʻALA).

Lauloa witnessed an interaction in which Nāwao jumped up from where he was sitting on some building steps and charged off to recess, leaving his lunch tray behind on the steps. Another student yelled out, “Hey, you forgot to compost your lunch tray!” Nāwao stopped mid-step and turned to the boy who was reminding him. The student restated his case, saying “Duh, your tray!” and expressing his aggravation without actually pointing to the offending item. Nāwao smiled and responded “Okay!” then ran off, leaving the tray on the step and the other student duly exasperated.

Lauloa called Nāwao out of the game and asked what he thought had happened just now on the playground. Nāwao explained that the other boy had been telling him not to play football with the others. This was so far off that it surprised Lauloa, and he began to wonder if Nāwao had trouble hearing; that might explain some of the inconsistencies in his behavior, as well as the slow start in following instructions. Lauloa took the opportunity to do a quick dictation assessment with Nāwao to test his hearing (MAKAWALU).
“Okay, I want you to write this down on the page: E-L-E-P-H-A-N-T. Good. Next, I want you to write the word “elephant” on your paper.” Nāwao scribed both words correctly on the page. Lauloa quickly considered about what to ask next. If it wasn’t his hearing, could it be that he was losing focus and not comprehending?

This time, Lauloa acted out the sentence as he dictated it: “The elephant is jumping on the bed.”

Nāwao wrote: “Elephant is running.”

“Okay, one more.” Lauloa was perplexed. Maybe his demonstration of jumping had been too distracting or confusing.

“Now watch my face and look at my mouth when I’m telling you what to write this time: The elephant is jumping on the bed.”

Nāwao wrote: “Elephant is jumping on the bed.”

In this moment of quiet, Lauloa came to realize that Nāwao’s challenges were about something more than hearing. Lauloa decided to call Nāwao’s guardian in for a conference. Since he hadn’t been informed of any IEP plan, it seemed likely that whatever Nāwao was going through, it would be appropriate to talk with her about setting up some diagnostic tests. In time, an auditory processing disorder was eventually found to be at the root of Nāwao's mistaking “jumping” for “running” and misinterpreting the playground exchange about the lunch tray left on the steps.

Lauloa wrote that, prior to this experience, he’d “heard that it [auditory processing disorder] was possible but never seen it in real life. So that was a makaʻala [realization of a new factor].” After reviewing Nāwao’s cumulative student file and conferring with his guardian to bring in a diagnostic specialist, Lauloa was even more
clear that getting “services” wasn’t where this ended. Lauloa saw this situation as an opportunity to empathize with Nāwao's experience and really understand that the interface between his inner context and outer context was a factor that made his experience fundamentally different from the other students in the learning context.

During the process of MAKAWALU around this new issue he’d discovered, Lauloa asked himself questions like these:

“Okay, so if this is something that’s key in the environment then how do I go about creating learning experiences that are going to be accessible to him? How do I make sure that his growth and his development isn’t constrained just because he has this special need? … How do I help this person to change and grow his capacity when it comes to reading and writing, especially because he has this unique challenge and he’s going to need to sort of compensate for that over the course of time?"

“What are all the possible effects that could come from this and can I come up with ways to ease this effect or to give him strategies to be able to go out in the world… maybe a way to explain to people, ‘Oh, sometimes I don’t always understand when you tell me something. If you can write it down or let me look at you while you tell me then I’ll understand it better.’”

“Well, okay, obviously this affects his development as a reader and a writer but I can see it’s also affecting the other students and his relationships with them in a way that’s not good. As a teacher, I have to think about how this is going to affect him and his family too. If they say, ‘Go and do that,’ and his family doesn’t understand that he’s got these special challenges… they say, ‘Go and do that’ and he doesn’t do it and then they give him a beating. Maybe that’s part of what he’s dealing with at home. As a teacher I have to respond to that.”

The process that Lauloa revealed in his interview makes visible how he was able to activate both themes in his discovery and navigation of a new factor he identified as part of the learning ecology: a novel category of student need which he had never anticipated or encountered before. Lauloa used MAKAWALU (taking multiple perspectives) as a habit of action to guide his reflections about the
implications of his own instructional decision making on everything from Nāwao’s classroom performance all the way to future relationships that Nāwao may cultivate in the world beyond school. Lauloa used MAKAʻALA (vigilant observation) as a habit of action that led him to focus his attention on a tiny initial discrepancy, observe the noted phenomenon more closely, and then apply a variety of assessment probes to gather information in an unfamiliar domain. Across the scope of this problem-finding and problem-solving process, Lauloa alternately drew upon each of the two themes in a complementary way to support new insights and link them to reasoned changes in practice.

As I noticed this pattern of alternation, I realized that there were some similarities between this flow and the cycle of alternating between “focus and flare” that is taught as a complement to design thinking in the Hasso Plattner Institute of Design at Stanford (also known as “the d.school.”) Their advice is articulated in this way: “When you're stuck, flare”—look for more ideas. “When you're lost or confused, focus”—dig deeper into one solution and you may gain a better understanding of the problem by seeing how it fails.

I considered the differences between what HIMENI teachers do and what designers do. Whereas engineers and product designers create solutions for a generalized problem space that varies with every user, teachers do know the specific context for their lesson or curriculum design (although that understanding of the context grows over time). When designers test their products in the real world, they go back and revise that same prototype and get to try the updated version out again. Teachers don't have that option; every time they teach a lesson— that’s it. The teacher
may tinker with a few stepwise adjustments to the lesson prototype if s/he has multiple class periods, otherwise any changes must wait until the next year, when the prototype must be redesigned for the context of the new students’ trajectory.

That said, there are specific things that teachers do which are remarkably similar to what designers do. Teachers engage in:

- needfinding from multiple points of view
- empathy that is the foundation for real relationship-building
- rapid prototyping of lesson designs (as they imagine how their plans will play out in class)
- testing via diverse streams of assessment
- iterative use of feedback from the learning context
- posing questions to self; testing hypotheses

I began to see that the MAKAWALU phase is somewhat similar to the first three steps of define, ideate, prototype, in which solution ideas flare out and expand. In contrast, the MAKALÀ phase of heightened attention and vigilance to feedback is more like the testing, evaluating, and empathizing; Figure 10 visualizes this.
I wondered whether, as the teachers were toggling between the two modes of MAKAʻALA and MAKAWALU, they were engaging in their own emergent process of design thinking, from an indigenous paradigm. Over the next few months as I made my customary visits to learning sites and interviewed them about their decisions and challenges, my observations seemed to be confirmed that a feedback-based cycle of iterative development was in action. Curious what they would make of a formal look at design thinking and its terminology, I decided to offer a workshop to a small eight-person focus group of Kulanui Aʻo teachers that included an introduction to design process as one of four tools and technologies they might choose to use within and in support of their teaching practice. I was careful to avoid using any names or labels,
and created an exercise that took teachers through the experience of the steps as taught by the Stanford d.school. The design challenge was to create a physical object and use it to teach a minilesson to their peers on an important concept. One group created a mobile to visualize the interlinked importance of genealogy and memory; another group created a pinwheel *waʻa* which they briefly sailed in an improvised pond outdoors to illustrate the relationship between wind and waves.

Everyone enjoyed testing the prototypes round-robin, but getting to that point was not so easy. The focus group members’ initial response was disorientation and overwhelm; the pace was intense and the task was confusing: “A concept? Which concept? What is it for?” However, they were willing to ‘go with the flow.’ As we reviewed the experience together in a closing debrief, they inductively identified the stages in the process. I offered them a visual diagram that showed a variety of different formal terminology for the design process; together we discussed the ideas of design thinking in relationship to Chip and Dan Heath's book “Made to Stick,” as an approach to their daily design challenge of getting students to absorb the *waiwai* of a lesson.

During the workshop debrief, I learned that they appreciated the exercise and saw immediate parallels between their planning processes and the cycle of iterative idea development that was embedded in it. One important clarification that they felt was not clear or visible in any of the models was the difference between: “the stepwise adjustments that we make in our classroom every day and the bigger shifts when you just *huli* [turn upside down] everything,” and create a wholly new iteration based on what you’ve learned. Ultimately they liked the process-based structure and the phases
of design thinking, but didn’t care for the language. They decided to put it in their own words.

While the group didn't agree upon how to distinguish between stepwise changes and grander-scale iterations, they did eventually generate the following labels (shown in Figure 11) to describe the steps that best described the pattern of their creativity in planning and teaching.

![Diagram](image)

**Figure 11.** The HIMENI teachers’ labels for the steps of their creative cycle.

The diagram above shows the descriptive names for each step that were generated by the HIMENI teachers ten weeks after their initial introduction to the formal process of design thinking. Dotted lines represent their insistence upon boundaries between the steps. Inner arrows indicate their awareness that at times, they do zig-zag across phases rather than following the sequence clockwise.

The focus group’s definitions are summarized here in brief: the ‘Reflecting’ stage includes a look both backward and forward at the connection between recent realizations and future directions – what must be strengthened in order to have
students grasp the *waiwai* of these lessons? During the ‘Brainstorming’ stage teachers opened the door for many possibilities, considering directions broadly. In the ‘Weighing & Deciding stage,’ teachers prioritized and considered the outcomes of possible options. In the ‘Envisioning’ stage (a step which is not generally a part of design thinking), teachers took time to think through the scenario of how their plans in the current state would actually play out among students—given what they know about current factors in the learning context. This step seems similar to MAKAWALU yet it is specifically based on awareness of the contextual factors identified through MAKA‘ALA that comprise the mental model of the learning ecology. The ‘Enactment’ stage includes the time when teachers with students and embodied, contextualized learning takes place for both party. Teachers make stepwise adjustment from student-to-student and class-to-class in order to ensure that learning experiences are well fit. During the ‘Evaluation’ and ‘Revising’ stage, teachers consider how students are reaching learning goals and review assessment data to determine what kinds of changes need to be made to keep everyone on track. These proposed changes, based on the last teaching cycle, provide fodder to inform the ‘Reflecting’ stage yet again.

The first four steps of Reflecting, Brainstorming, Weighing & Deciding, as well as Envisioning may each be considered some form of MAKAWALU: perspective taking and searching for the *waiwai*. The final three steps of Enacting, Evaluating & Revising, plus Reflecting can all be considered some form of MAKA‘ALA, noticing vigilantly and testing hypotheses against patterns observed, in order to improve benefits of future action.
When asked in an interview (several months after the focus group) whether there were “any parts of your teaching that are like designing,” Haʻokea offered an extended reply. He began with the comment that he saw many points of affinity and overlap. In recent months, he and his teaching partner had faced a lot of challenges in setting up a new outdoor teaching context (in a forest, starting a native plants nursery, with a small shipping container in which students could shelter from the rain).

Haʻokea went through each of the stages of design process and gave a fluid explanation of what he and his teaching partner did that was similar to each element. In the process of explaining this during the interview, he had the insight that they did all these steps (reflecting, envisioning etc.) together as a team except for one: evaluating. Typically they split student work and read it on their own at home each night, coming together in the morning for reflecting and sharing the revisions each felt were necessary. Haʻokea left the interview inspired and curious about what might happen differently if he and his partner were to share their evaluation process just as they shared all the other steps.

While design thinking has become well-known through the successes of engineering and product design in recent decades, the origins of iterative creative process are much older, and have analogues within traditional ecological knowledge (TEK) and indigenous problem-solving (Barnhardt & Kawagley, 2005; Battiste & Henderson, 2000; Cajete, 1994; Gadgil, Berkes & Folke, 1993; McGregor, 2005). The indigenous peoples today are here because of the akamai (clever) ways of their ancestors that enabled them to survive and thrive through adversity. One well-known “indigenous modern” design innovator who embodies an indigenous design tradition
is Pacific Northwest Coast native Kesu’ Doug Cranmer (1927-2006), lineage chief of Kwakwaka‘wakw heritage. A humbly self-described “whittler and doodler,” his paintings and carvings pushed the far edges of traditional representation using modernist visual techniques, mass production and technology; they brought him great fame in the 1970s and 80s. Cranmer was a man who learned by apprenticeship and modeled his process, teaching his students through action; his efforts initiated a new era in indigenous designing and representation. Kesu’ successfully balanced his indigenous view toward “doing things the right way,” with experimentation and innovation—and his contribution took the entire corpus of First Nations’ arts to a new level (Kramer, 2012). At the entrance to University of British Columbia’s 2012 exhibit of Cranmer’s work, his words were written in silver, eight feet high: “Design is the key to everything. If you learn how to do design you can do anything.”

The HIMENI teachers are engaged in their own process of designing, one that suits their unique perspectives, teaching contexts and learning ecologies—one which is rooted in indigenous perspectives that emerge from their unique positionality in the 21st century Hawaiian world. Their cyclical application of MAKA‘ALA and MAKAWALU to the ill-structured domain of teaching, may justly be seen as a design innovation that has emerged from a long indigenous tradition of design innovation—one that is convincingly demonstrated by the continued survival of the Hawaiian people, their values, and their traditions through the chaos of forces in our current historical moment. Speaking with some of her peers in the kupuna generation, Aunty Ulumau mused that:
At some point in time, our ancestors sat around in the same way we’re sitting just now. The roles they were playing, the questions they were facing 100 years ago when everything was changing—it’s just like for us. We are a part of history now. If we trust ourselves to always be who we are, the changes of history will be on our side.

By continuously making choices that are *pono* in each moment, the HIMENI teachers can trust that their cyclical process of observation and course correction will lead to a *pono* result: navigation along a path toward *ea*.

**Themes as a Conceptual Framework**

Together, the eight themes that emerged in this study constitute a conceptual framework, represented in this chapter in the visual metaphor of the *wa’a*, a Hawaiian voyaging canoe. The indigenous knowledge system of the Hawaiian people is the particular body of theory and experience that informs this conceptual framework through cultural values. HIMENI teachers drew upon these eight themes and their affordances as they sought to create a new pattern of teaching that furthered cultural goals, was appropriate for 21st century learning settings, and that also differed from the norms of conventional schooling, through which they themselves had been taught. Continuing to work toward *ea* (self-determination in education), the HIMENI teachers are on target to meet the expectations of stakeholders within the movement, including families of all types who value Hawaiian practices of teaching and learning.

The patterns within the learning experiences that HIMENI teachers designed and enacted can be seen to operationalize many of the constructs known in the learning sciences to have an impact on knowledge development and the development
of adaptive expertise in learners. The patterns within HIMENI teachers’ pedagogy propose a contextually-situated and coherent solution to the problem of how to redesign education so that it reflects a dynamic orientation to knowledge (rather than the static, didactic orientation).

With care not to expropriate cultural frames of reference, it is fruitful to look at the HIMENI teachers’ shifts in perspective and pedagogy in order to better understand how other teachers may learn to shift their practices away from the pedagogies by which they were taught—into better alignment with the local, contextual, technological and diverse frames of reference carried by their 21st century students.

Taken as a whole, these practices propose a model for teaching and learning that is aware of and responsive to diverse inputs within the learning ecology. The following chapter offers “generative praxis” as a term to describe the orientation to knowledge that the HIMENI practices cultivated within students, and within professional moves.

Extrapolated from the Hawaiian cultural foundation into the domain of modern formal education, PONO, HANA, LAWENA, LAULIMA, NALU, NAʻAU, MAKAWALU, and MAKAʻALA function as “strategies of action” (Swidler, 1986) helping HIMENI teachers learn to change their pedagogy. Through reflection and application of these themes, the teachers were learn from one another, navigate complex decisions and enact a coherent approach—one that that was as new for them as it was for their students.
Chapter 5: Pedagogies of Generative Praxis – HIMENI Teacher Practice

Elements of the Pedagogical Model

As active inservice teachers, study participants were constantly applying and interpreting Hawaiian cultural values in dialogue with the theory and research of their profession—as they had encountered that theory through direct experience and at Kulanui Aʻo. Every day brought opportunities and challenges that needed to be negotiated with ongoing awareness of their personal and collective kuleana (responsibility or privilege) to do what is pono (balanced). Over the two year span that most participants were in the study, the values-based, reflective, and iterative process they steadily applied to guide pedagogical decision-making led to tremendous changes in professional practice.

This chapter proposes a pedagogical model based on the patterns that became visible in the enacted curriculum of HIMENI teachers who were constantly navigating decisions and selecting pedagogical moves in alignment with the eight themes of Chapter 4. While Hawaiian cultural values aren’t suitable for ‘borrowing’ or adapting in other settings, the recurring pedagogical features of HIMENI teachers’ practice do give us an excellent example of what teaching and learning for generative praxis can look like in action. Certainly the motivations, settings and contexts of HIMENI teachers are unique, but the strategies that these teachers used to balance the complex

62 Had a phenomenological analysis of the teachers' conceptions of their understanding of HIMENI education been done at the end of each cycle of the program (as was done at the start of each), I believe pre/post comparison would reveal significant conceptual change at the ‘group’ level of analysis, in addition to the changes that were noted at the individual level of practice.
interdependence of local contextual features with globally-valued concerns offer an opportunity for others to learn by analogy—reinterpreting and adapting the pedagogical patterns that make sense for other local contexts and communities, including indigenous programs and conventional schools alike.

The ten features of this pedagogical model for generative praxis show us a constellation of strategies that, tested in the many different HIMENI schools, were found to be successful at bringing about the kinds of learning experiences that can support the development of generative praxis for students and teachers alike. The key criteria for inclusion as one of the pedagogical model’s ten elements were that all teachers across the three groups (including all school types in the sample) needed to have demonstrated an aspect of each element as an integrated part of their practice, at least during the second year of their two years in the program.63

Pedagogical practices were noted through field observations, self-report, artifacts, and hōʻike (including evidence of learning shared by the teacher and presentations made by their students), as well as critical events reviewed in Makaʻala Moment Reflection Logs. The data about teacher practices reported this chapter is the product of much filtering and paring down; results are summarized in brief, rather than in the extended formats of Chapters 3 and 4. The elements of the model are not ranked, but rather organized in an order to facilitate comprehension.

The orientation toward “knowing-in-action” encouraged by this pedagogical

---

63 A few HIMENI teachers changed schools at some point during the program and faced school-level constraints (such as being required to follow a proscribed "Success for All" curriculum); in those cases, data gathered after the move was not considered as part of the analysis for elements.
Pedagogical Model Exhibiting Generative Praxis

The ten elements of the HIMENI teachers’ pedagogical model are as follows, based on observations and evidence of HIMENI teacher practice in actual learning contexts. A list is provided, followed by a brief description of each element.

1) Place
2) People
3) Transdisciplinarity
4) Apprenticeship (two-way relationships)
5) Concrete experience as a basis for theory-building
6) Context-rich problem solving scenarios
7) Multiple Assessment Streams
8) Iterative Practice (with real-world outcomes)
9) Routines for reflection-in-action and directing attention
10) Flexible Group Norms (for interaction and social/distributed cognition)
Place (#1)

The approach to incorporating place that was used by HIMENI teachers encompasses widely-known methods and thinking about place-based education (Emekauwa, 2004; Grunewald, 2003; Grunewald & Smith, 2008; Orr, 1991) and also extends it, in a particularly Hawaiian way, by incorporating genealogical relationships with the land (McGregor, 2007), and ‘ike ‘āina: learning directly from the land, rather than just about it (Meyer, 2003; Ho'omanawanui, 2008). HIMENI teachers conducted cultural protocols every day if their schools allowed it, doing so outdoors “in the environment” whenever possible. They found value in exposing themselves and their students “to the elements” as part of the learning process, and discussed how doing this allowed their students access to direct inspiration from the place. Valuable questions could emerge from the complex relationships that learners noted and developed their awareness of. Complexity could not be disguised or dumbed-down when place was the center. Every student entered the conversation at their own developmentally-appropriate level, and unexpected synergy arose. The majority of HIMENI teachers sought to involve their students in issues pertaining to the place by framing curriculum opportunities that their students could become involved with, such as data collection on native species frequency/recovery, lo‘i kalo (taro patch) and food projects, land development, water rights, invasive species control, etc. The teachers’ relationships with their outdoor teaching settings were dynamic: learning contexts emerged wherever they needed to, be they on campus, as part of ahupua’a (forest-to-sea) systems, at community homes, in warehouses and shipping containers, during special events, or at wahi pana (special places told of in story and song).
People (#2)

Given the many, ever-changing contexts for learning, the line between home, school, family and community functioned as more of a semi-permeable membrane than a boundary. Teachers worked their curriculum goals around the needs of the many people with whom their students were developing the relationships that formed the basis for knowledge development. Parents with particular skills to share, grandparents, community members and cultural practitioners were regular participants and contributors to learning activity, creating an intergenerational weave in the texture of some schools. Frequent visitors brought their experiences and stories from around the islands (and the world) to share with students; visitors of all kinds participated in school life, from indigenous cousins interested in the HIMENI schools’ development, to scientists who literally just sailed in off the Pacific Ocean to give a lecture on ocean plastic pollution levels. Reciprocity was established through cultural protocol, gifts or hands-on service, contributing further to learning experience.

Transdisciplinarity (#3)

By taking points of entry to curriculum planning that were not rooted in the traditional disciplines (English, Math, Science, History etc.), HIMENI teachers were able to unfold patterns in teaching and learning that came from a different, more coherent source: the contexts of life. Many teachers pointed out that they made a deliberate transition away from starting their unit planning with the Hawai‘i State Standards, and now were beginning to start with authentic questions and themes that had both local and global significance. By starting with inquiry about what was happening around
them, they saw that students were able to engage in making sense of the learning objectives for themselves. The HIMENI teachers noted that they worried much less about “hitting the standards” now that they were using transdisciplinary approaches; they knew their students were reaching the benchmarks of the grade-level standards and going farther, in ways that the students could experience and also remember.

**Apprenticeship (#4)**

*A’o* is the Hawaiian word for both learning and teaching, and it describes a kind of cognitive apprenticeship that goes in both ways. Teachers might start out with plans for what all students must know, but it was through the dynamic interplay of learning/teaching relationships that new ideas were seeded, new questions posed, new points of view imagined (on both sides of the desk). Every pair or group that interacted came away with something unique to their interaction—something to reflect upon that shaped all parties involved. Whether in the form of older student-to-younger student, peer-to-peer, *kūpuna* (elder)-to-group, interpersonal relationships offered a foundational contribution to learning in the HIMENI teachers’ contexts. Hawaiian learning patterns require observation first, followed by listening and reflection. Only after learning and ‘trying to do for oneself’ may questions be asked. In the context of a relationship between two people, the notion of who is learning and who is teaching becomes fluid. The imperative of “watch, listen, learn” applied to teachers as well; they cultivated an attitude of *maka’ala* (vigilance), hoping to gain both explicit and implicit cues from their students about what the *haumāna* (pupils) needed to take the next step in learning.
Concrete experience as a basis for theory-building (#5)

Direct experience was used by HIMENI teachers as the primary strategy for learning; this aligns with the Hawaiian principle of hana (understanding by doing), and parallels cultures with oral traditions around the world that depend on accurate transmission and application for survival (Mugalu, 1995; Rubin, 1995). Creating instructional opportunities for students to use the body as an instrument for exploring, refining and reinforcing knowledge was a preferred method, used whenever possible. Guided experience, reflection and questioning formed a platform for inductive reasoning, hypothesis testing and theory-building by students. HIMENI teachers found reliance on experience (whether unmediated or scaffolded) to be a reliably effective means of promoting student learning over the long term. Several teachers mused that they suspected students built a stronger foundation (for later retrieval and application in appropriate contexts), and were able to understand more abstract concepts when they began a learning sequence through experience. This is coherent with the findings of Hariharan, Sadiq and Sheppard (2008) who note that, in their study of two different groups, “access to the embodied sense of experiencing became the shared context and the anchor through which the different concepts could be understood,” (p. 438).

Context-rich problem solving scenarios (#6)

HIMENI teachers found ways to involve their students in the contexts, or some representation of the contexts, that they were learning about through various means: moʻolelo—story, myth, primary historical sources, family interviews; movement—makahiki games, nāne/riddles, puzzles, hula; sound—rhythm, oli (chant) mele (song),
metaphor—analogy and allusion; visual imagery and video—drawing/collage/mural, motif, historical film (Nā Maka o ka ‘Āina, YouTube), digital storytelling; active simulations and challenges, as well as physical representations—maps and body-based units of measurement. Engaging students in hands-on learning in the environment was the HIMENI teachers’ gold standard (one can teach effectively about water rights across the globe by beginning with a study of water rights at home), but not every issue and concept in the curriculum is directly accessible in that way. By seeking to create rich contexts for problem solving, HIMENI teachers discovered ways to get their students thinking from new perspectives and wondering in novel ways that helped to develop nuanced conceptions. Lipka & Adams (2004) demonstrated that Yup'ik culture-based learning was as effective for diverse student groups in Alaska as it was for rural and urban populations of Yup'ik and other Alaska Native students; this challenges the notion that culture-based education is simply correcting a mismatch (Deschenes, Tyack & Cuban, 2001; Nelson-Barber & Lipka, 2008). Through developing context-richness in their curricular designs that ask students to solve real questions, HIMENI teachers are exploring a key that may unlock the power of culture-based education for the diverse learners who are in their care.

Multiple Assessment Streams (#7)

Like a rushing river fed by many small tributaries, the HIMENI teachers structure learning environments to have many types of diverse assessment data coming in; this strengthens their understanding of learner performance as well as responses to change that they’ve orchestrated in the learning context. From visual sweeps for quizzical
body language to student-written daily self-reflections on comprehension, ongoing formative assessment is the preferred data source for HIMENI teachers because it informs frequent adjustments in instruction. Diverse assessment types are sought, though finding or creating assessment tools that are appropriate for indigenous contexts has been a persistent challenge for many of the teachers. The Nā Lau Lama working group on Indigenous Assessment suggests that selection of diverse assessments can be on the basis of level of contextualization, and on the basis of whether it is an assessment that brings about new learning, or whether it gives a picture of current learning. HIMENI teachers also mention a preference for assessments they can use with high frequency. Summative assessments that come at the end of units are treated as useful ‘snapshots of performance’ to share at student-led parent conferences, but their power is less about informing instruction than bringing student knowledge together for a purpose; standardized tests are viewed as particularly useless to the teacher since results arrive months after the students have departed to the next grade/teacher. By having a constant flow, from multiple, frequent and diverse assessment tools, HIMENI teachers assure that they are staying aware of student performance; through their own reflection on data patterns, they are informed with a clear picture of results that helps them understand critical factors and develop mental models that are related to actual dynamics instead of assumed ones.
Iterative Practice (#8)

The compelling purpose that brought HIMENI teachers together as a movement for cultural revitalization continues to organize their activity on a daily basis. With such strong clarity of focus, the teachers employ instructional strategies without formulating attachments to "correct procedure." Rather than being guided by a formula, HIMENI teachers anticipate and resolve problems in response to conditions at hand, using the principles laid out in Chapter 4 and drawing upon other aspects of the corpus of Hawaiian values. With each cycle of curriculum design, teaching, assessing and redesigning, the teachers further refine their mental models of their teaching context—becoming aware of important features specific to that context, and adjusting to student needs. They are able to incorporate new learnings that have been gained from previous cycles of teaching; this occurs sometimes in a stepwise fashion, but other times in a wholesale reassessment of approach. Students also are engaged in iterative practice as they play roles in the community by working on projects with real-world outcomes. The students’ hana (work, process and product) shows their level of attainment and accomplishments are visible to all, allowing them to acknowledge their performances and to give/receive assistance that is targeted at the point of need. As with any collaborative, community-based initiative, the students experience highs (sense of valued contribution) and lows (unanticipated factors and challenges) that require them to develop awareness of contextual factors and respond by adjusting their approach over the project cycle.
Routines for reflection-in-action and directing attention (#9)

Through the repeated use of simple techniques (referred to variously as routines, protocols and technologies) HIMENI teachers are able to see students' levels of self-direction and attentional focus. Some examples of these routines include the following: morning protocol (in which the student must ask for permission to enter the learning environment while presenting a physical/emotional stance that demonstrates visibly his or her readiness); naʻau check (the kumu asks the student to check in with his/herself, saying "Pehea kou piko?" or another conceptual phrase); asking students to continue what they are doing but change to a different language or register (from Pidgin to Hawaiian, or Hawaiian to Standard English) and notice how it changes their experience. Through repetition of simple situations like these, students who are not yet able to control their attention have the chance to practice and develop their executive function; students who are able to direct their attention have repeated opportunities for reflection and metacognition punctuated throughout the day's activity. Repetition and reinforcement of these physical/mental/emotional/behavioral awareness activities makes the role of executive function both visible and valuable in the learning context. By repeating such routines, HIMENI teachers actively engage students in setting internalized patterns of behavior and self-management triggers that they may activate at will, in settings within school and beyond.
Flexible Group Norms (#10)

Just as the HIMENI teachers must create and navigate a "third space" between two cultural worlds (Gutiérrez, 2008; Gutiérrez & Baquedano-López & Turner, 1997; Gutiérrez & Baquedano-López & Tejeda, 1999), they also model and teach their students how to make these choices, hoping that they will be good wayfinders in the coming era. Modeling explicit “code switching” in language and register, HIMENI teachers also signal and invite behavioral code switching across cultural modes—in the service of building their students’ ability to navigate the intermingling of cultural worlds with dexterity. By scaffolding shifts between dominant and non-dominant norms for their students, HIMENI teachers provide a kind of collective cognitive apprenticeship that allows students to feel the differences between modes, notice subtle cues, and experience personal authenticity in both modes. This practice of switching norms is used authentically for in-school purposes as well, such as when moving between leveled-proficiency groups and mixed-level groups; the interaction dynamics between students can shift from "competing collaborators" to "mentoring dyads." Following a kūkākūkā (discussion or conflict resolution), teachers might ask the students to respect the temporally-limited norm of a kapu aloha, requiring everyone to think and speak only thoughts that are loving and generous for the next twenty-four hours. Students build a repertoire of norms for interaction and distributed cognition that they feel comfortable within over time; both teachers and students can invoke the norms as needed within the group, activating them when situations or personal interpretations suggest they may be needed for the task or problem at hand.
Defining the Model for Generative Praxis

By beginning with a commitment to reintroducing Hawaiian values in education, and starting to teach through observation and experience, HIMENI teachers have simultaneously generated and collectively built a shared repertoire of essential practices that includes these ten elements, as well as many others that are not as comprehensively applied. Taken alone, the ten elements would surely be sufficient to encourage some new approaches and useful strategies at the classroom level. The HIMENI teachers have seen its power firsthand; they who embarked upon their teaching compelled by kuleana (responsibility), have become part of a distributed community of practice that engages collaboratively in inquiry, generating a conceptual framework and a set of strategies made it possible for them to do the following:

- bring their papahana (learning experience designs and/or curriculum) into better alignment with their values
- recognize and remedy discrepancies in their own worldviews so that their practices are equitable and coherent
- interpret and apply their new understandings of teaching to address local and global challenges of the 21st century
- nurture students who have gone on to navigate their own life paths with a sense of competence, value, connectedness and purpose

The series of pedagogical strategies that HIMENI teachers consistently found functional as they sought to advance these aims had its roots in the conceptual framework laid out in Chapter 4, and was aligned with both Hawaiian cultural values and constructs in the learning sciences. As the result of sustained application and testing of those thematic principles in practice, we have now a worthy model, revealing an important orientation to knowledge development that deserves our attention; it has the potential to help the profession of teaching to respond effectively
to the rapid diversification of the United States’ students and their knowledge(s).

The teachers orchestrate student learning experiences that get kids to hoʻāʻo, “to try to learn, to taste,” (as translated by Rubellite Kawena Johnson in Meyer, 2001, p. 131); learners are willing to hoʻāʻo even though they don’t yet feel sure of what to do, and teachers adopt this stance as well. Such a learning-by-doing approach to developing their knowledge of teaching means that HIMENI teachers are able to grow through interactivity, reflection and openness to the influence of contextual features, including those known and unknown.

During an interview, teacher Kaleionaona articulated her manaʻo (awareness or thoughts) of the power of this phenomenon directly, invoking the proverbial phrase “Aʻo aku, aʻo mai” at the start of his statement. The word aʻo means to learn and to teach; a fluid, shifting role between them is indicated in the Hawaiian language. The phrase can be translated as either “give aʻo and receive aʻo” or “learn and teach, teach and learn;” it means that learning and teaching goes both ways (Chun, 2011). In an interview, Kaleionaona invoked the phrase:

“Aʻo aku, aʻo mai.” There is reciprocity in learning at all times between student and teacher, making the very labels themselves deceiving.

The truth is that while we help our students along their own paths, we are simultaneously taking a journey of our own that is illuminated through their relationship with us.

Our abilities as “teachers” are indeed ultimately revealed through what is gained by our students, so assessment of their learning is also an evaluation of pedagogical effectiveness.

When we are invested in the transfer of knowledge of importance to ourselves, and perhaps our communities, the effectiveness of our teaching becomes a part of our own transformation and the inevitable up and downs of the education process can test our sense of self.
Thus, experiences that support our sense of mastery and reaffirm the relevance of our teachings are critical to sustaining this journey."

As Kaleionaona articulates, the coherence between knowledge development that is engaged at these two levels (mutually embodied learning experience and allowing uncertainty) is a key indicator of generative praxis: the approach to learning recapitulates the form of the knowledge being learned. This is a highly essential and recognizable feature of generative praxis; it confirms that there has indeed been a shift within the learning ecology. Teachers who started out not knowing what to do, but knowing they "had to do something" have interdependently converged on a system of practices that allows their students to learn the local/global knowledge which they as teachers value, and to do so in ways that feels coherent with the broader values of the culture.

By watching the practice of these teachers, we notice four characteristics that help us to identify and describe the presence of generative praxis more broadly:

**Flow between theory & experience**

Adaptivity

Iterativity

Improvisation
Flow between theory & experience:

Teachers generate new knowledge through the practice of actively navigating “patterns & potentials,” where patterns observed in real life seem different than what theory suggests is possible, and where the potentials observed in real life seem different than the patterns that theory suggests. Cultivating a flow between theory & experience is a way of allowing patterns and potentials to mutually inform one another as a learner asks questions and makes choices about how to best act in alignment with purposes and values. By looking for patterns & potentials, and searching with vigilance for discrepancies between those to bring into balance, the learner practices an active state of discernment. See Figure 12 below.

**Figure 12.** Flow between theory & experience as a feature of generative praxis.
Adaptivity:

Teachers generate new knowledge through the practice of navigating64 “context,” where context is the entire the learning ecology, including internal and external factors. Adaptivity is a way of responding to circumstances so that affordances are able to reveal themselves and be built upon— working with the features of the context to understand them and their relationships/weights deeply, as a way of knowing what adjustments to make to progress toward desired purposes. See Figure 13 below.

Figure 13. Adaptivity as a feature of generative praxis.

---

64 What is meant here by “navigating”? The word was introduced through the wa‘a (canoe) metaphor, indicating the process of “finding one’s way.” Applied here it could mean interpreting situations and making choices about dilemmas; noticing, wondering about, identifying discrepancies are all parts of navigating decisions; looking from multiple points of view, challenging one’s own assumptions, adopting a deliberative, reflective or critical stance… any of these things and more could be the form that “navigating” takes for a teacher.
**Iterativity:**
Teachers generate new knowledge through the practice of navigating “failure,” where failure is the discovery that your best attempt didn't even come close to the target, and the entire group witnessed your mistake. Iterativity is a way of responding to failure by reflecting and adjusting your expectations or models to incorporate the learning gained from every experience, regardless of the outcome as a failure felt or a success to celebrate. See Figure 14 below.

**Figure 14.** Iterativity as a feature of generative praxis.

![Iterativity Diagram](image)

**Improvisation:**
Teachers generate new knowledge through the practice of navigating “not knowing,” where not knowing is the state in which teachers frequently find themselves, either at the edge of their expertise or way out in the deep end in a project that feels like chaos. Improvisation is a way of accepting what is, and making sense through action—discovering what happens, rather than acting a certain way because it makes sense according to preconceptions. See Figure 15 below.

**Figure 15.** Improvisation as a feature of generative praxis.

![Improvisation Diagram](image)
Drawing upon these four aspects, and from the broader range of practices observed, I suggest the following definition:

Generative Praxis (n.)

1. an orientation to knowing and learning that frames embodied, contextualized experience as a dynamic source of information to be interpreted and applied for meaningful purposes.

2. the use of any processes or practices for knowledge development that cultivate or sustain such an orientation

**Locating Generative Praxis**

This analysis allows us to define and introduce a term for an orientation that has been present within many of the enduring theories of learning and teaching. This subsection helps us to contextualize the term generative praxis within the broader field of educational theory, as it emerged within the model that HIMENI teachers have proposed through their patterns of pedagogical decision-making.

The pedagogical model is a collection of strategies developed through testing against culturally-rooted principles of practice in the HIMENI teachers' conceptual framework. While its details are empirically grounded in the Hawaiian context, it is an illustrative case: there is something deeper here being made visible—something with applicability to modern theories of learning, and with fidelity to an indigenous knowledge system that has been successfully organizing human knowledge for survival over millennia. The orientation to knowledge revealed in the case of HIMENI teachers' use of generative praxis suggests many parallels to existing theories of learning and educational models that have been a part of the world of American education between the 1800s and the present. As the years have passed, different historical approaches have given rise to new educational models and pedagogical
strategies to match learning theories. As described by Mayer (1992, 2010) three views of learning have predominated:

Knowledge as response acquisition
(behaviorist; rewards for getting right answer or correct behavior)

Knowledge as information acquisition
(transmission-focused; teacher delivers, student processes)

Knowledge as construction
(constructivist; students make meaning from experiences)

Sfard (1998) articulates a fourth view that now underlies sociocultural theories of learning:

Knowledge as participation
(knowing happens through activity, across relationships, in contexts)

The embodied, contextualized experience that gives life to generative praxis allows all of these views of knowledge to be recognized within its scope: behavior, information acquisition, construction and participation are all part of the knowing that happens with and within the world.

Generative praxis can be distinguished from Wittrock’s notion of “Generative Learning” (1992) because, while it is certainly aligned with his focus on the neurological elements that form the biological matrix for learning, the view of

---

65 This view of knowledge as participation has been brewing in the social sciences and education since the days of Dewey and Vygotsky; for contemporary interpretations, see the work of Barab & Duffy, 2000; Cole, 1996; Hutchins, 1996; Lave & Wenger, 2001; Pea, 1993; Rogoff et al., 2003; Saxe, 1998; etc. There are now many multidisciplinary and interdisciplinary research perspectives that converge in the learning sciences and point to the ways that knowledge is distributed across the learner, interactions and the environment itself.

66 The sociocultural perspective and the Kanaka Maoli perspective converge in their view of knowledge as relational, constantly changing, and distributed across community interaction, language, places and practices.

67 All four of these views are recognized and hold a valued place within Hawaiian thinking and the practice of HIMENI teachers. The pedagogical model for generative praxis does not exclude these views; it encompasses them.
knowledge that was built into Wittrock’s theory of learning was that of “knowledge as construction.” As was customary in his field of educational psychology at that time, Wittrock had a purely in-the-head notion of cognition and construction:

Reading comprehension occurs when readers build relationships (1) between the text and their knowledge and experience, and (2) among the different parts of the text (Linden & Wittrock, 1981, p. 45).

In contrast to Bakhtin’s perspective (from a “knowledge as participation” view) that saw a person, alone in a room with her thoughts not to be alone at all because of the many texts and voices she had internalized through previous experience (Koschmann, 1999; Emerson, 1983), Linden & Wittrock chose to frame their 1981 study of reading comprehension as based on relationships between the text and the internal mental structures that the reader had constructed within through acts of interpretation. Although they share the word “generative” in common and acknowledges the agentic power of the learner, generative praxis is fundamentally different than Wittrock’s Generative Learning because it is aligned with this view of “knowledge as participation.”

The following diagram in Figure 16 provides an illustration of the key relationships in generative praxis as this study conceptualizes it.
As a person has an embodied experience at a particular time they are embedded in the plane of a specific context, assumed here to be a learning ecology since that is our domain of study. At that moment in time, the context of the learning ecology allows for both action in context (such as practices, experiences and interactions) and reflection in context (such as ideas, patterns, hypotheses). There is a mobius–like flow established between the person’s experience of action and reflection. This is generative because both action and reflection inform next steps. Unlike many orientations to knowledge that create or assume a hierarchy of the reflective/theoretical over the active/practical, a person’s generative praxis draws upon both, allowing them to mutually influence the direction of that person’s next ‘move’\textsuperscript{68}

\textsuperscript{68} The term “move” here signifies a type of move similar to what one makes in checkers; reference to this type of “move” is made frequently by Donald Schön in his book “Educating the Reflective
in the learning ecology.

Many other well known educational perspectives and theories share features with generative praxis, including the ideas of Vygotsky, Dewey, Montessori, Bandura, Bronfenbrenner, Bruner, Engeström and Schön. Figure 17, below, illustrates parallels.

<table>
<thead>
<tr>
<th>Shared features of enduring learning theories and generative practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vygotsky’s theory of constructivism</td>
</tr>
<tr>
<td>Dewey’s theory of “educative” experience</td>
</tr>
<tr>
<td>Montessori’s theory of attentional control</td>
</tr>
<tr>
<td>Bandura’s theory of self-efficacy</td>
</tr>
<tr>
<td>Bruner’s theory of spiral curriculum</td>
</tr>
<tr>
<td>Bronfenbrenner’s bioecological model of human development</td>
</tr>
<tr>
<td>Engeström’s theory of expansive learning</td>
</tr>
<tr>
<td>Schön’s theory of reflection-in-action</td>
</tr>
</tbody>
</table>

Figure 17. Enduring learning theories’ shared features with generative praxis.

Whether or not a reader is familiar with the theories above, generative praxis is still something everyone can use to frame practice; the concept helps us identify an element of our experience as learners and teachers. A group of kūpuna during a focus group interview offered accessible descriptions of some of the ways that generative praxis (the characteristics of adaptivity, improvisation, iterativity, and flow between theory & experience) are clearly visible in their world:

“Now we are dealing with climate change. It’s raining during the summertime! There’s hail in Kona! [Think of] that fisherman who had that place [its ecosystem patterns] down; he’s now having to adjust. You’ve gotta know your environment… then you know what your practice is.”
-Aunty Mohala

"Huli‘au! Huli‘au, this is a time for change. Things become new again because you change your perspective; and because you change your perspective, this becomes a time of turning. See the kupukupu fern growing straight out of the rock? That is a new beginning. See the kalo growing out of the mud? That tells me that when the children are fed the right foods, they are going to do what? Huli‘au! One thing we can bank on…is the change; and it is how you look at that change that allows the growth." -Aunty Helemauna

That’s huli‘au (a turning point), turning the dirt, turning it over to say—where do I go? You’re not supposed to have that answer. It is the process. As a person who has a kuleana (responsibility or mission to fulfill), I need you to be a thinker and a problem solver.”
-Aunty Māmane

“As an expert, you are always trying to improve. Internally, interpersonally, or as part of a group—[in all these ways] you continue improving. Practicing it, in their environment, in their place is what makes a loea (master). As long as the person is practicing, and becomes an expert in that practice in that place, then the family and the kūpuna of that place would determine whether or not you are the loea.”
-Aunty Lehuamaoli
If adaptivity, improvisation, iterativity and ‘flow between theory & experience’ are its characteristics, then generative praxis is not something new, it has been around for a very long time. By naming generative praxis, we are giving a formal description of an elephant which has been "in the room" for a very long time—a creature that we have not yet recognized because we lacked the shared vocabulary to describe it from our myriad and varied theoretical, epistemological and cultural points of view. Collectively, we must accept that there are as many meanings for generative praxis as there are contexts for its expression and cultivation. In turn, many kinds of activity will be part of operationalizing generative praxis across settings. A set of practices and routines may be pono for one setting, and cause inequity in another. There will be no single "method" to promote generative praxis broadly across contexts for student learning, teacher learning, and the learning of teacher educators. Examples include: making & doing; communicating; problem solving; problem finding; pattern finding; question posing; listening; discrepancy noticing; logical reasoning; critical analysis; metacognition; reflection; lateral solution finding; context awareness (influencing factors); relating.

Generative praxis may be practiced in the context of a number of approaches such as inquiry-based learning, cooperative learning, experiential, problem-based, cognitively-guided instruction, service learning, and social-emotional learning, to name a few. There are no limits or restrictions on where the pattern can be found.

The context for this study made visible a set of characteristics for generative praxis in the specific context of an indigenous education movement. While the process was utterly unique, its implications have the potential to be far-reaching. The
schematic in Figure 18 illustrates the set of relationships that gave rise to the findings. A line is drawn showing what can be applied in diverse contexts and what cannot, because it is specific to Hawaiian indigenous contexts.

**Figure 18.** The emergence of generative praxis as a construct within HIMENI practices.

As a term, generative praxis is new, but its aspects are already interwoven within the fabric of theory and practice in education. Now that it is explicitly described...
here, how might we begin to recognize it, cultivate it, and assess it?

From her perspective as a *kupuna* (elder) and cultural practitioner who became a HIMENI teacher, Aunty Mohala speaks directly, wondering about one of the key issues she has uncovered in her generative praxis:

“[With so many students, each at different levels], how do you assess this type of learning? That really is the crux of the issue. For years we’ve been trying to figure that out in indigenous education. That is not part of the mainstream conversation yet—but it will be. I promise you that.”

Aunty Mohala’s years of experience inspired her to pose this prescient question, but it is her *naʻau* that leads her to trust without a doubt that in time, conventional education systems will “come around” and realize the enduring wisdom of indigenous knowledge systems. Accepting generative praxis as an important part of teacher knowledge is most assuredly a step in that direction, but one that can safely be taken without risk of expropriating, distorting or exploiting indigenous knowledge systems outside the contexts for which they are intended.

Along with features that promote student cultivation of generative practice and its assessment, teachers will need to ensure that they cultivate and sustain their habits of generative praxis. To accomplish this, the HIMENI teachers’ example points to the following practices that are expressions of the four aspects of adaptivity, improvisation, iterativity and flow between theory & experience:

- Ability to apprentice oneself to the learning ecology and its members
- Openness to learning from one's own context/students
- Active interrogation of one's own weaknesses
- Analysis of student learning data
- Identification of one's own growth edges
- Iterative experimentation and tinkering
- Attention to discrepancies between expected patterns and realities
- Vigilance in discerning features that are relevant in the learning context
• Seeking experiences that intervene in the pattern of didactic system
• Active challenging and refinement of mental models
• Reflection upon one's own practice
• Persisting through initial disequilibrium
• Positively embracing experiences/cycles of failure

Currently, there are three types\textsuperscript{69} of knowledge that are considered important for teachers to enact in their teaching practice:

1) Contextual knowledge, a general knowledge of the educational context

2) Content knowledge, also called subject matter knowledge

3) Pedagogical content knowledge (PCK), the relationship between a teacher’s understanding of content matter and the specific instruction s/he provides to a particular student (Shulman, 1986, 1987; Grossman, 1990; Carlsen, 1999). PCK can be thought of as a teacher’s grasp of the body of “ways of representing and formulating the subject that makes it comprehensible for others” (Shulman, 1986, p. 9).

I would like to propose that we add generative praxis to this list of essential teacher knowledges—approaches to teacher preparation, teacher assessment and ultimately the teaching profession could shift significantly if we take on the challenge of developing generative praxis as a means of addressing the complexity of diversity in American schools today. If content knowledge (subject matter) has its origins in the tradition of the academic disciplines, and pedagogical content knowledge (PCK) has its origins in the experience of teaching disciplinary knowledge in diverse ways, then generative praxis describes the kind of teacher knowledge that has its origins in the practice of making knowledge out of the interaction between situations, learners and

\textsuperscript{69} Mishra & Koehler (2006) have argued convincingly for a kind of Technological Pedagogical Content Knowledge, however this may be considered a subtype of PCK. One other type of knowledge often discussed in the field of teacher preparation and the assessment of teacher practice is the cultivation of “dispositions” appropriate to the profession, however the existence and role of dispositions in teaching is contested and it is not included here.
the contexts for knowledge itself. Generative praxis is a kind of knowledge that must have a respected place in learning environments; it visibly reflects what learning science has shown, that: “cognitive activities should be understood primarily as interactions between agents and physical systems, and with other people” (Greeno & Moore, 1993, p. 49). Though this is an empirical finding confirmed across several disciplines, it is rarely evidenced in the structure of conventional learning, yet generative praxis requires putting this view into action across various contexts.

The development of generative praxis among HIMENI teachers as represented in Figure 18 provides an important instantiation of how generative praxis can be developed within local learning ecologies across a system of schools. This is a single case, but a comprehensive one—a case that is illustrative of an ecological approach to developing knowledge-in-action that can’t easily shown in experiments or interventions because it requires changes across the entire learning ecology. Due to the specific indigenous cultural context where the study was rooted and the overarching need for cultural sensitivity—even as we seek to learn from their example—it is important to clarify which features of the study can appropriately be generalized.

As a representation of the findings of this study that can travel securely to contexts beyond Hawai‘i without risk of being culturally extractive or misapprehended, Figure 19 shows some of the sources, (in addition to place itself) from which diverse contexts for learning (including teacher education) might draw resources to support the development of generative praxis among teachers and students alike.
To solve the pressing puzzles of our world today, the youngest generation would benefit from having an orientation to knowledge that is consistent with generative praxis. Through cultivation of generative praxis, current and future teachers would focus on making a break with the conventional learning methods by which they were
taught and assessed, and become able to set and explore new patterns that are well-fit to address the needs (and use the funds of knowledge) of the more diverse students and learning contexts they encounter. Teacher educators will need to use generative praxis as they begin to redesign the trajectory of teacher learning in an experiential manner; they have the challenge of discovering a whole new pedagogy that can develop content knowledge, pedagogical content knowledge and generative praxis in their teacher candidates. Their work will be rewarding, sending novice teachers off with an awareness of their profession as one of constant learning, and the tools to create learning contexts that cultivate generative praxis, and perspectives that allow them to respond to diversity, complexity and change with efficacy and effectiveness. The teaching and learning practices that cultivate, develop and sustain generative praxis (among learners of all ages and roles) deserve our attention, given the impact they may have in response to challenges of diversification and global uncertainty.

70 The federal government’s enforcement of NCLB has brought the contrasts between its “banking” view of knowledge transmission and standardization into the public eye; many teachers and members of the public recognize the limitations of this view, but have not known how to resist it. Perhaps insisting upon a system of education that cultivates generative praxis in young people is one way to move forward.
Conclusion

In his editorial titled “Preparing people for rapidly changing environments,” researcher John Bransford urges us to note that:

As educators, we may end up training students in specifics that are no longer useful once they reach the workplace. Some suggest that preparing people for change highlights the need to emphasize the adaptive features of expertise… Nevertheless, people who function in rapidly changing environments must learn to navigate in situations where they are at the edges of their existing knowledge (2007, p. 1).

Bransford points toward the advent of an ‘obsolescence of content’ which seems to be fast approaching for American educators in light of the rapid diversification in culture, language and technology currently taking place in our nation. His observation about the need for people to navigate situations where they constantly are at their “edges” already describes the professional conditions of the HIMENI teachers in this study. The constantly-changing structure of the HIMENI schools in response to changing learning ecologies and community needs requires the teachers to push their edges; even those who lead the way in navigating knowledge at the overlap of conventional and Hawaiian spheres must still push their own edges as they strive to be ever more pono in pursuit of the educational aims of ea.

This study of HIMENI teachers is significant as one snapshot of their movement in time. It is of particular import for our era because of what it instantiates about the kinds of teacher practices and orientations to knowledge that actually have the potential to transform the profession—once it accepts that it must move, even if uncomfortably, to explore its own ‘edges’ of challenge and growth.
Limitations

My path to framing this study began when I was (literally) invited to “jump in the canoe” and paddle with the families of the HIMENI movement. I moved from the role of supportive community member into the role of school co-founder and teacher, and eventually I made the transition to researcher. Having occupied all those roles as both participant and participant observer, I recognize that bias is a potential weakness of this study. Since I adopted an indigenous empowerment research methodology and strengths-based stance, I have confidence that the research questions are valid and shared by the community; my decision to share the data which I think can be of benefit to others may lead to underreporting “critiques” of the movement, however, the bias is both transparent and justified within the methodology.

Concern about confidentiality is one study limitation that emerges from my closeness to the community. While no participant was portrayed in a negative light, their actual choices and challenges are exposed in detail here; I do not wish anyone to feel vulnerable to critique or speculative identification. I have gone out of my way to create composite characters that blend the experiences of two or more people so that, although the participants may be able to identify their own stories, they will not be able to identify one another as particular characters, even though their words and experiences appear page after page. (For this reason, even the acknowledgements section does not name the community members to whom I most want to give acknowledgement and gratitude.) I went to great methodological lengths to disguise the identities and schools of participants, and perhaps this has created a layer of “mixedness” that obscures certain dimensions of the teachers’ actual experience—
dimensions that may be symbolically or genealogically relevant for Hawaiian readers, yet that are consistently missing or misplaced. Readers should be aware of this artifact of my choices as a researcher.

The chief benefit of my simultaneous positionalities as community member, former HIMENI teacher, indigenous ally and researcher is ecological validity. I was gifted with the opportunity to gain years of experience in place-based learning and teaching. Having been a member through the tough early days of the movement, HIMENI teachers not only opened up to me, they sought me out and laid bare their dilemmas in search of new insights; I was extremely privileged as a researcher, and am extremely grateful. While protecting the identities and the confidences that were shared with me, I have translated the concerns and issues faced by the HIMENI teachers as directly as possible.

Typically the benefit of ecological validity in a study is that it makes observations more representative of what “actually” goes on, and therefore, more generalizeable. The six years that I spent as a participant-observer leave no doubt in my mind that what I observed and came to call “themes” and “generative praxis” were very real, robust phenomena, bubbling up among all three of the groups that gathered. Due to the unique contexts in which every teacher in every school and community are embedded, only a subset of the findings is appropriate for generalizing—those that have to do with process.

In this case, I believe the benefit of ecological validity is seen in accuracy of interpreting conceptions—though one can never be certain, triangulation can be persuasive. It also seems important that I was able to understand some of the kaona
(hidden layers of meaning) to which participants were pointing when they referred to local events (like a testimonial in a legal battle over water rights), or spoke Pidgin (Hawaiian Creole English) as they described an invasive species eradication effort that they wanted their haumāna to get involved in. In many cases, I was able to grasp the surface details, as well some of the roots below the surface that made these statements significant in the broader context of the movement.

ʻIke (understanding) can take place at a level beyond active listening or empathy; it can be something that feels more like “breathing in tune with,” or eating poi from the same ʻumeke (bowl or calabash). My intention has always been to contribute to the collective aim of ea, whether occupying my role as researcher, community member, teacher, or indigenous ally. Having been an apprentice to the context of a particular HIMENI school, and then as a researcher, becoming an apprentice to the apprentices of many other schools, I’ve had opportunities to weave together many threads of ʻike (information, knowledge and understanding) gained from experience. These threads that come from many different people and diverse perspectives are integrated together in the themes and findings about generative praxis, and that, I believe, is what gives them both ecological validity and a foundation that is relevant for other communities that are also highly diverse.

Linkages across rural/urban schools, language communities, and islands were rare because of this same diversity, but we can have confidence that the themes and practices which did persist across such different groups, at different schools, on different islands for the entire span of the study were indeed those that made generative praxis clearly visible. Several study participants read parts of the study and
reviewed the conceptual framework as part of member checking; no points of concern were identified, suggesting that observations are well-rooted in the data and findings are well-aligned with member views.

**Alternative Explanations**

The generative praxis observed in the HIMENI teachers’ professional practice seems extremely important as an essential aspect of knowledge for teaching in this era of ever-increasing change. An alternative explanation for this ‘novel’ finding could be that many people have witnessed generative praxis and simply described it so diversely (e.g. Dewey’s educative learning, Bruner’s learning spiral, or Sherin’s content-knowledge-complexes), that it has been challenging to recognize under so many different labels.

It seems clear that the phenomenon of generative praxis is not making its first appearance as a phenomenon. Perhaps it could be better characterized as a new dimension of an already-existing construct (such as, for example, the “iterative” dimension of “pedagogical content knowledge”— one that is now becoming more visible due to an accelerating intensity of learner diversity that demands adaptation. That said, I believe the methods, data and findings of this study are sufficient to support the characterization of generative praxis as its own construct, as we explore relationships with and distinctions from other previously described concepts.
New Directions

The field is wide open for future research into the construct of generative praxis. The set of four characteristics of generative praxis could combine and become visible across such a variety of learning ecologies that it is possible—even likely—that it will be cultivated and documented one way within the practice of teachers, another way in the practice of teacher educators, and in yet another way among K-12 learners and tertiary students. Operationalizing and measuring the construct may be somewhat less complex, since characteristics of generative praxis will align across the contexts, even if their manifestations differ.

It seems possible that a program or school seeking to cultivate generative praxis among students could serve as a testbed, provided that it uses some pedagogical approach that is context-adaptive and responsive to students’ funds of knowledge. Qualitative research could lead to development of measures for iterativity, adaptivity, innovation, and flow between theory and practice; teacher-researchers could learn from students by watching their individual and collective trajectories. We would have an opportunity to learn from students by following their pathways of interest in various projects (place-based, problem-based, inquiry-based, design thinking etc.), their relationships with diverse collaborators, and their employment of technologies that structure learning outside the conventional paradigm. Teacher roles would have to be carefully defined and continuously monitored so that the co-constitutive relationship (aʻo aku, aʻo mai) that gives rise to learning directions is truly the product of both teacher-learners and student-learners, and not a reproduction of conventional
classroom dynamics. Among HIMENI teachers, these new roles were guided by the community vision of *ea*, which encouraged them to select curriculum with *waiwai*, and to seek a path that was *pono*. Among teachers in diverse communities, a bricolage of the community’s (and students’) own resources, such as physical place, funds of knowledge, heritage practices etc., would contribute to new ways of teaching and learning that promote generative praxis.

Some questions worth further investigation:

a) How can teacher learning experiences and student learning experiences begin to look more alike— so that both engage generative praxis? (Design experiments in schools might complement qualitative methods for exploring this question.)

b) What kind of research program would it take to move generative praxis from being a concept in this exploratory study to a construct that is validated, and able to gain acceptance in the fields of teaching and teacher education?

c) How will teacher educators respond to the concept of generative practice? Will they recognize its importance and uptake the practices, or will there be strong resistance to change?

d) How can we learn inductively from the direct experience of those who are already teaching and learning with generative praxis in the mainstream? (Case examples could be compiled so that we can see patterns more easily, as well as patterns of their variations.)

e) Do patterns of co-occurrence exist between teacher practice of generative praxis and parallel experiences in other areas of activity? I noticed that many of the teachers who were using generative praxis also had other “practices” beyond the learning ecology in which they played the role of apprentice learner or teacher, such as theatre/acting, dance/hula, team sports (canoe paddling), hunting/outdoormsmanship, botany/forest management etc. Were these teachers just ‘the type’ who self-selected to search out knowledge for themselves and find answers through experience? Was this pattern merely a co-occurrence or a cause-

---

71 Professional communities of practice such as “critical friends” or Sherin’s “clubs” to develop professional vision in this area might be of benefit.
and-effect relation? Might the act of regularly being in the role of novice/learner increase one’s receptivity to a particular knowledge orientation? Was there some other influence within the broader learning community (of those who engaged in the other parallel practice) that was influencing these teachers’ conceptions and practice of teaching—perhaps a particular set of Hawaiian cultural values? Or did having any practice beyond teaching helped certain teachers increase generative praxis in their professional lives?

**Study Implications**

Most broadly, this study suggests that those learners and teachers who seek to cultivate a dynamic orientation to knowledge that will help them adapt to changing conditions should find hands-on ways to participate in ongoing cycles of generative praxis. They must make sure that their approach to learning and teaching deeply mirrors the form of the knowledge being learned, so that the ‘shape’ of action and participation in learning is coherent with the understandings being gained. This coherence is one of several essential and recognizable features of generative praxis, and perhaps the one that is most visible. Generative praxis can only be seen in action and interaction (in a small group, in an institution, in a community etc.) because it is a responsive, embodied knowledge—something that is an enacted co-creation of the practitioners, their interactions, and the entire learning ecology.

The HIMENI teachers will go on teaching and learning using generative praxis to develop their professional practices and their schools—following the pattern of the embedded indigenous cultural values that gave rise to the themes and the pedagogical model described in this study. The Hawaiian Indigenous Movement for Education and Native Intelligence is standing firm on a foundation of its own research emerging from generations of observation and iterative refinement, and in solidarity with the ancestral
worldviews that inspire new ways to embed indigenous cultural values within educational experiences.

It is my hope that this study will provide one more stone in support of the kumupaʿa, the strong cultural foundation on which the HIMENI schools can continue to kūpono (stand firm), affirming their confidence in the mission and practices of their movement, and also to kūʻē (resist) the increasing pressures to “standardize” curriculum, pedagogical decision-making, and teacher education.

Teacher educators, like those surveyed in the 2011 AERA “Division K” survey, know that increasing diversification is leading to increasingly complex contexts for teaching and learning. One way to address this complexity is to face directly the fact that teacher preparation must initiate teachers into the “uncertainties” of a professional trajectory that can neither be predicted nor imagined. Such an initiation must go beyond simply informing preservice teachers about these complexifying factors—teacher educators must find ways to give novices transformative experiences that make a break with the apprenticeship of observation and intervene with new patterns of practice. Novice teachers also need experiences of being embedded in more than one learning ecology (at least two for contrast/comparison); teacher educators must find ways to make the entire cohort’s learning about specific contextual factors visible. Structuring teacher learning so that novices may benefit from the substantive variability of their cohorts’ experiences is critical because this strategy allows new teachers to embark on adaptive trajectories of professional learning rather than fixed ones.
Conceptions of teacher knowledge that are dynamic and promote generative praxis comprehensively—in theory, language, and activity—should be embedded in the pedagogical “methods” classes that are the staple of teacher education programs. The greatest challenge in accomplishing this shift may be to change the practices of teacher educators; they will likely need to cultivate their own generative praxis as they orchestrate new experiences to help them reframe prior conceptions and redevelop courses to convey a dynamic orientation toward knowledge.

Ultimately, it is from their own experiences of the value of generative praxis in transforming teacher education programs that teacher educators will be inspired to include “generative praxis” as one of the essential domains of teacher knowledge—alongside pedagogical content knowledge and contextual knowledge.

The most important implication of this study for the current K-12 generation is that generative praxis provides a wide-open path to adaptively respond to what they already can see around them: the world is changing! The way things are is not the way they will continue to be; cultivation of a dynamic orientation to knowledge in action and in interaction is one strategy for survival and success.

One key in shifting to a generative praxis orientation in schools will come from ensuring that young learners have direct experiences which help them grasp the coherence between process, interaction and outcome. A depth of multiple experiences that allow for cultivation of the iterativity, adaptivity, improvisation and ‘flow between theory and practice’ will enhance students’ sense of self-efficacy for creative action and problem-solving in the real world. Youth can already observe the many problems and puzzles out there, and that no single authoritative answer exist. Being
taught through methods that cultivate generative praxis helps young people to know from experience how to navigate the many solution paths, and to understand firsthand how the solution or process chosen has a profound impact on the outcome of whatever ill-structured or generation-spanning “wicked” problems that our complex world presents. Educational experiences that support flexible, accessible, adaptable knowledge structures and that allow young people to draw from past learning experiences are essential. Educational systems that are designed to orchestrate and embed conceptions of knowing-in-action and knowing-in-relationship-to one’s immediate and extended communities can cultivate experiences that build the context-sensitivity, reflection, communication, personal efficacy and agency, resilience, and vision. All these capacities will be increasingly critical for young people to practice in the complex terrain of the 21st century and beyond.

Indigenous communities may take from this research a strong affirmation that the knowledges of ancestral traditions are truly treasures of humanity, and deserve many layers of careful attention and reflection when being incorporated into new visions for educational improvement. The HIMENI schools have had great successes even as they have faced profound challenges, and it is their practice of ho’i i ka piko, always returning to the source of ancestral knowledge, that has woven all of their many communities and educational strategies together in a coherent movement. This close alignment with cultural values makes possible the emergence of the eight themes as a clear conceptual framework guiding the HIMENI teachers. The greater the

---

72 For further background on wicked problems, see the work of Rittel and Weber (1973) who introduced the term to describe problems that have vast real-world implications and no clear right or wrong; simply recognizing whether a solution has been found may present challenges, and optimizing solutions to wicked problems is even less common.
practice of embodying the living traditions within an indigenous community’s own knowledge system, the greater the likelihood that modern adaptations and reinterpretations will be aligned with and reflective of the original waiwai. Heritage language, food practices, games, health practices, plant medicine, music and dance, aesthetic design and functional arts, cultural and spiritual protocols, intergenerational exchange—these are all part of the spectrum of life’s activities that can be integrated and reflected in the contexts of educational experience. When this happens, an indigenous educational model is positioned to chart a steady course to perpetuate its knowledge traditions and practices for generations to come.

Members of some indigenous communities may find it inappropriate for me to interpret findings that are rooted within one indigenous community as the basis for recommendations to any other indigenous community or to educators in general. I respect their points of view, and have done my best to understand such perspectives and consider them in my presentation of this research. After much reflection and discussion with members of the Hawaiian community and the HIMENI schools, I selected a methodology and a “strengths-based stance” that allowed me to relax this concern, and simply share what I feel can be of most benefit to our human family. I have tried to draw clear boundaries around what is indigenous knowledge that must be respected and left alone, and which parts of the study are appropriate for “reinterpretation.” I understand that there is some risk in putting forward any research that explains aspects of the “intellectual property” of indigenous peoples, but I hope that global guidelines for use of such sensitive intellectual property, as well as the boundaries set by indigenous groups and also within this document will be respected.
by all communities of readers.

An indigenous elder of the Innu shared the helpful guideline that one should “never take what is not offered,” and I do believe that the HIMENI movement has offered its teachings to be shared, as articulated in Kaʻōiwi’s words from Chapter 3: “…a healing is taking place. This movement is for Hawai‘i, and it is also to change the heart of the world.”

Kincheloe and Steinberg (2008) suggest that, while taking care to avoid “exploitive appropriation of indigenous wisdom,” a way can be found to involve indigenous knowledge in education across diverse contexts that supports the growth of “multilogicality” in teachers and students alike. They offer a description of how careful use of indigenous knowledges in curriculum does the following:

1. Promotes rethinking our purpose as educators
2. Focuses attention on the ways knowledge is produced and legitimated
3. Encourages the construction of just and inclusive academic spheres
4. Produces new levels of insight
5. Demands that educators at all academic levels become researchers (Kincheloe and Steinberg, 2008, p. 147-149)

Just as these authors find value in including indigenous knowledges in curriculum for diverse communities, I find a tremendous need exists to build a greater understanding of the value of indigeneity, indigenous voices and indigenous knowledge traditions in academic research spaces— particularly within the community of educational researchers, since their policy recommendations have direct impact on the lives and opportunities for self-determination of urban and rural native peoples.

One of the gifts that this study uncovers through its look at the HIMENI teacher practices is the centrality of transdisciplinarity, as a prominent feature of
Kanaka Maoli thought, Culture Based Education, and place-based learning— and also as a key element of the pedagogical model for cultivating generative praxis. The practice of transdisciplinarity might not even be considered possible in the era of the Common Core State Standards\textsuperscript{73} and teacher licensing requirements, which mandate the division of content areas and encourage siloed thinking among teachers and students, rather than integrative understandings. Looking from a Hawaiian point of view that begins with embodied experience, we can makawalu and recognize that there is a proper place for the content areas, and a place for transdisciplinarity as well—each way leads to different thoughts, frames and solutions. The Kānaka Maoli of the HIMENI movement strongly prefer the path beginning with concrete, sensory transdisciplinary experience, and then progressing toward interdependent/integrative thinking, followed by analysis into component parts. Without an indigenous Hawaiian perspective, there is no competing set of claims from which to argue for a challenge to the dominant paradigm of “disciplinary” knowledge divisions— a formula that has been associated with patterns of coercive assimilation since the 1800s in Hawai‘i.

While it may justly be viewed as disrespectful, culturally inappropriate, and assimilative for members or representatives of a dominant culture to set curriculum and standards without consideration of the many cultures that abide in North America today, the United States government continues to do so. Passage of laws like NCLB/ESEA\textsuperscript{74} which requires set margins of progress on standardized assessments without regard for unique community contours (indigenous and otherwise), puts

\textsuperscript{73} Common Core State Standards divide curriculum (and categories of knowledge) along disciplinary boundaries like English Language Arts, Math, Science, Social Studies etc.

\textsuperscript{74} Popularly called the “No Child Left Behind Act” or NCLB, the actual law came from a reauthorization of the Elementary and Secondary Education Act of 2001 (ESEA)
intense pressure on schools to conform to conventional structures and expectations. Federal encouragement of national adoption of the Common Core State Standards means that the norms and resources approved for use in educational spaces are shrinking—a reality to which every school and community must strategically respond (since the effectiveness of the conventional model in our current era is in doubt).

The need for a reflective and strategic response by indigenous communities is particularly important since many indigenous groups have the *kuleana* (responsibility) to do more than just protect and nurture their children; they must protect and nurture their land, their language and their lifeways. To some in government offices and district headquarters, indigenous people represent a “statistically insignificant” minority, but many indigenous communities are lineageholders of indigenous knowledge systems that have themselves survived and enabled people to adaptively survive changes over millennia. While group numbers may be small, the perspectives and the epistemological diversity held within the estimated 6000-7000 indigenous groups (Rÿser, 2011, p. 3) across the earth each maintain their own local knowledge traditions; indigenous people are the caretakers of a huge proportion of the extant traditions of human knowledge. We would do well to support these guardians of our collective human heritage of epistemological diversity; the rights of indigenous peoples for self-determination should be protected.
Epistemological Diversity

There exists an urgent need among the community of educators (including educational researchers, teacher educators, teachers, and anyone who works with children) to grasp and interpret the value of this concept of epistemological diversity. Until I encountered Hawaiian ways, it was impossible for me to imagine how different another person’s worldview could be from my own, yet coming to see and understand some of the ku'ana ‘ike Hawai‘i (Hawaiian way of being and knowing) has transformed my life profoundly and positively.

Just a few decades ago in the US, many people did not formally recognize or value the contributions of people of color, the disabled, the queer and non-gender-conforming communities, yet, they still were able to benefit from reading great writers like Audre Lorde and James Baldwin or listening to the music of great artists like Tito Puente. Similarly, today there is little recognition of the benefit we collectively gain by the presence among us of people who hold different worldviews, yet the work of those who resist aggressive assimilation and continue to speak their languages and practice their lifeways is ultimately contributing great benefit to humanity. Perhaps as people with international and indigenous perspectives saturate more regions of the US, it will become harder not to have the kinds of encounters that open one’s eyes to the epistemological diversity within global human culture.

Educators have a responsibility to be at the vanguard of the push for epistemological diversity in learning communities. For schools to be genuinely safe spaces for all students, teachers need to become aware of epistemological differences and adopt a generative praxis that allows them to develop both context-sensitivity and
teaching practices flexible enough to allow for more than one “right” answer. If our US educational institutions are to sustain the increasing tide of epistemological diversity, rather than suppress it (or supplant it, as in colonization), then teachers must learn to use inclusive pedagogical models and practices; they must teach in ways that allow students’ worldviews to exist side by side with those of others.

One of the most important implications of this dissertation research is that the academic field of education must start now to recognize epistemological diversity as a feature of our world, and ultimately, one that is valuable for the future of humanity.

Significance

In his 2009 book “The Wayfinders: Why Ancient Wisdom Matters in the Modern World,” anthropologist Wade Davis explains that the numerous cultural groups he has spent time with are “very much alive and fighting not only for their cultural survival, but also to take part in a global dialogue that will define the future of life on earth.” Davis points to climate change as the most fundamental reason we must now address this question of the “consequences of a particular world view,” and expand our respect for and knowledge of other worldviews. His call resonates with those of many, both in the academic world (Battiste & Henderson, 2000; Battiste 2008b, Cajete, 1994; Kincheloe & Steinberg, 2008; Jacobs, 2013) and beyond.

In a forest ecosystem, the value of biodiversity for survival and resilience after a disruptive crisis becomes apparent. When complex, canopied forests are cut and replaced with monocultured “tree farms” (growing only one type of tree), they are vulnerable to disease and can be completely devastated by the appearance of a single
pest or pathogen that thrives on that species of tree. When threats arrive in an old-growth forest rich in biodiversity, the complex forest possesses many organisms and lines of defense that open up pathways to resilience, unlike the monoculture of a tree farm that can quickly be decimated.

Epistemological diversity is humanity’s biocultural diversity—an asset in solving the global challenges of our era. Just as monoculture slashes the ability of a tree farm to respond to threats, so suppression of epistemological diversity in favor of a monocultural worldview limits our species’ collective repertoire and therefore our ability to respond to imminent and future threats.

Through wide-scale practice of teaching and learning methods like generative praxis which are context-sensitive and allow for dynamic conceptions of knowledge-in-action, we can develop new traditions of respect for epistemological diversity, just as over the last forty years we have developed increased respect for cultural diversity in American schools.

As we seek to address today’s massive problems, we need to attend to the value, the messages and the teachings of indigenous knowledge systems; nurturing communities with diverse points of view increases our collective ability to truly makawalu and makaʻala as we search for ways that our species can mitigate, adapt to and survive climatic change.

Children born this year are among the generation that will bear the brunt of climate change (Bartlett, 2008; UNICEF, 2013). The children of this generation are also the ones who, if taught with a generative praxis that supports their adaptivity, iterativity, improvisation and flow between theory and practice, will be able to build
on the current generation’s solutions to the ill-structured problems we now face.

Change is already with us; ‘content obsolescence’ has arrived whether we see it or not. There can be no doubt that conditions in the next decades of the global 21st century will hold little resemblance to the current status quo.

At times of incredible risk we also have openings of incredible opportunity. Generative praxis is a pathway by which educational systems may prepare today’s youth to be imaginers, performers, experimenters, connectors, planters, orchestrators, integrators, helpers, solvers, seekers, persisters, listeners, adapters, needfinders, envisioners, tinkerers, riskers, communicators, reflectors, observers, empathizers, collaborators, makers, improvers, transformers, initiators, nurturers (and the like), who possess all the skills they need to solve the complexities of the future, survive, and thrive. There is no time to wait for the system to change itself; teachers and teacher educators must begin to do things differently.

The group of HIMENI teachers in this study accomplished three specific goals as they pursued their vision of bringing about *ea*:

1) taught students “cultural dexterity” needed to navigate multiple worldviews

2) engaged the youngest generation and their families in actively working toward community self-determination

3) connected people to land and place, through language, cultural practices and traditions

These are all triumphs, yet, as they put it, “The process of transformational education is our *makana* [gift] to the world.” Through their efforts as a movement, the HIMENI schools, communities and teachers have brought forth and made visible a new model
for transformational education: generative praxis— a concept and construct that is indeed a *makana* (gift) for our times. The best gift we can give in return is to interpret these teachings for our own context, and put them into action. To teach every member of the current generation how to embody what the *kūpuna* knew how to do: *hoʻomau* (continue). Continue observing, continue connecting, continue to *hana* (work) and continue striving for excellence. Continue to ‘*Ōlelo Hawai‘i*, continue to do things in a *pono* way; continue to *mālama* ʻāina and care for Earth in the ways that matter most. *E hoʻomau!*
Glossary of Hawaiian Words

Please note that this glossary is to help readers, but it should not be mistaken as any sort of guide to ‘Ōlelo Hawai‘i. The descriptions provided in the following glossary are based on modern colloquial use, combined with parts of definitions given in the Hawaiian Dictionary by Mary Kawena Puku‘i and Samuel Elbert (1957). Hawaiian words have many meanings that are contextually signaled; a single word may signify one concept as well as its extreme opposite. The definitions here are abbreviated ‘sketches’ that include only those meanings evoked or implied within the scope of this document. Additional information on can be found within the online Hawaiian dictionary at http://wehewehe.org or from other primary sources available through http://ulukau.org.

<table>
<thead>
<tr>
<th>Hawaiian Word or Phrase</th>
<th>Description</th>
<th>Related Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘ae</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>‘a’ole</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>‘āina</td>
<td>Land and all the aspects of realm of the land; literally, “that which feeds”</td>
<td></td>
</tr>
<tr>
<td>‘ai ola</td>
<td>To eat and live in a way that promotes health; from ‘ai, food or, to eat</td>
<td></td>
</tr>
<tr>
<td>‘ai pono</td>
<td>To eat in a balanced way that is pono in every aspect; from ‘ai, food, or to eat</td>
<td></td>
</tr>
<tr>
<td>‘ākia</td>
<td>An endemic shrub, notable for its use as a fish poison</td>
<td></td>
</tr>
<tr>
<td>‘anakala</td>
<td>Uncle; a term of respect and/or endearment</td>
<td></td>
</tr>
<tr>
<td>‘anake</td>
<td>Aunty; a term of respect and/or endearment</td>
<td></td>
</tr>
<tr>
<td>‘auamo</td>
<td>To pick up, to lift up, as if to carry</td>
<td></td>
</tr>
<tr>
<td>‘auamo kuleana</td>
<td>To take up a burden; figuratively, to take on one’s responsibility (kuleana)</td>
<td></td>
</tr>
<tr>
<td>‘aumakua</td>
<td>Family guardian spirit; deified ancestor; ‘aumākua is the plural form</td>
<td></td>
</tr>
<tr>
<td>‘auwai</td>
<td>The channels of free flowing water in a lo‘i kalo or taro patch</td>
<td></td>
</tr>
<tr>
<td>Hawaiian Word or Phrase</td>
<td>Description</td>
<td>Related Terms</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
<tr>
<td>ʻawa</td>
<td>The plant <em>Piper methysticum</em>, or, a relaxing beverage made from the roots of the plant. Called “kava” in its broader use across Polynesia</td>
<td></td>
</tr>
<tr>
<td>ahupuaʻa</td>
<td>A land division from the mountain to the sea; the ahupuaʻa system organized Hawaiian life and relationships through the land</td>
<td></td>
</tr>
<tr>
<td>aʻo</td>
<td>To teach and to learn</td>
<td></td>
</tr>
<tr>
<td>aʻoaʻo</td>
<td>A lesson plan, as spoken of by HIMENI teachers in ʻŌlelo Hawaiʻi</td>
<td></td>
</tr>
<tr>
<td>akua</td>
<td>Spiritual realms, deities, and/or God (<em>Ke Akua</em>)</td>
<td><em>Wao akua</em>, the uppermost part of a mountain</td>
</tr>
<tr>
<td>alaheʻe</td>
<td>A native shrub-like tree, <em>Psydrax odorata</em>, known for its straight growth, used for numerous purposes</td>
<td></td>
</tr>
<tr>
<td>alakaʻi</td>
<td>Leader, group leader</td>
<td></td>
</tr>
<tr>
<td>aliʻi</td>
<td>Chief, high ranking families by bloodline</td>
<td></td>
</tr>
<tr>
<td>aloha</td>
<td>Love, care, concern for others, to be caring</td>
<td></td>
</tr>
<tr>
<td>ʻeleu</td>
<td>Bright, ready to learn</td>
<td></td>
</tr>
<tr>
<td>ea</td>
<td>Air, breathing freely, self-determination, sovereignty</td>
<td></td>
</tr>
<tr>
<td>haʻaheo</td>
<td>To cherish with pride; to walk proudly</td>
<td></td>
</tr>
<tr>
<td>haʻi ʻōlelo</td>
<td>To present a story or a short talk about a topic; an extemporaneous speech</td>
<td></td>
</tr>
<tr>
<td>haʻi manaʻo</td>
<td>To present one’s opinion; an informal speech</td>
<td></td>
</tr>
<tr>
<td>hala</td>
<td>The tree or the leaves of the tree <em>Pandanus tectorius</em></td>
<td></td>
</tr>
<tr>
<td>hālau</td>
<td>A school, or a house of learning</td>
<td><em>Hālau hula</em>; a dance company</td>
</tr>
<tr>
<td>hana</td>
<td>Work, labor, practice, effort</td>
<td></td>
</tr>
<tr>
<td>hānai</td>
<td>To foster, nurture or to adopt, as one raises a child.</td>
<td></td>
</tr>
<tr>
<td>hānau</td>
<td>To give birth</td>
<td></td>
</tr>
<tr>
<td>haole</td>
<td>Foreigner or any foreign person; vulgar use refers to negative stereotypes of White people</td>
<td></td>
</tr>
<tr>
<td>haumāna</td>
<td>A pupil, a student; singular and plural are both spelled haumāna</td>
<td></td>
</tr>
<tr>
<td>Hawaiʻi nei</td>
<td>Figuratively, “this beloved land” or “this fine place”</td>
<td></td>
</tr>
<tr>
<td>heahea</td>
<td>A call with the voice, customarily offered by Hawaiians upon approaching a dwelling; also offered in response to a request to enter</td>
<td></td>
</tr>
<tr>
<td>Hawaiian Word or Phrase</td>
<td>Description</td>
<td>Related Terms</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
<tr>
<td>hewa</td>
<td>A mistake, fault or error; wrongdoing</td>
<td></td>
</tr>
<tr>
<td>hoaka</td>
<td>The crescent moon; a crescent shape</td>
<td></td>
</tr>
<tr>
<td>hoaloha</td>
<td>A friend, literally, a beloved companion</td>
<td></td>
</tr>
<tr>
<td>hoe</td>
<td>A canoe paddle, or the act of paddling</td>
<td>Hoe wa’a are “the canoe paddlers”</td>
</tr>
<tr>
<td>hoʻāʻo</td>
<td>To try, to attempt, literally “to sample”</td>
<td></td>
</tr>
<tr>
<td>hōʻailona</td>
<td>An omen or sign</td>
<td></td>
</tr>
<tr>
<td>hōʻiʻo</td>
<td>The fern <em>Diplazium [Athyrium] arnottii</em>; often eaten when the fern shoots are sprouting and form “fiddleheads”</td>
<td>Also known as warabi or pōhole</td>
</tr>
<tr>
<td>hōʻike</td>
<td>To show or exhibit; to demonstrate in a performance showing the level of one’s knowledge</td>
<td></td>
</tr>
<tr>
<td>hoʻokele</td>
<td>A navigator</td>
<td></td>
</tr>
<tr>
<td>hoʻokupu</td>
<td>An offering, a presented gift</td>
<td></td>
</tr>
<tr>
<td>hoʻolauna</td>
<td>A formal introduction; the initiation of a new relationship</td>
<td></td>
</tr>
<tr>
<td>hoʻomaʻamaʻa</td>
<td>To make accustomed or to make familiar</td>
<td></td>
</tr>
<tr>
<td>hoʻomaopopo</td>
<td>To make understood, to develop understanding</td>
<td></td>
</tr>
<tr>
<td>hoʻopāʻanaʻau</td>
<td>To memorize; with reference to knowledge, to make firm and solid within one’s naʻau</td>
<td></td>
</tr>
<tr>
<td>hoʻopāpā</td>
<td>A particular form of cultural communication; a type of debate or back-and-forth discussion</td>
<td></td>
</tr>
<tr>
<td>hoʻopili</td>
<td>To make close, to bond</td>
<td></td>
</tr>
<tr>
<td>hoʻoponoʻopono</td>
<td>A cultural or familial process of setting relationships right (pono) through prayer</td>
<td></td>
</tr>
<tr>
<td>hoʻoulu</td>
<td>To cause to grow, to cause to flourish</td>
<td></td>
</tr>
<tr>
<td>hoʻoulu</td>
<td>To cause to grow and/or flourish</td>
<td></td>
</tr>
<tr>
<td>holoholo</td>
<td>To go traveling; to be on the move</td>
<td></td>
</tr>
<tr>
<td>huakaʻi</td>
<td>A journey or a trip, or, for students, a field trip.</td>
<td></td>
</tr>
<tr>
<td>hui</td>
<td>A group, an association or a society; also a gathering of such a group</td>
<td></td>
</tr>
<tr>
<td>hui pū</td>
<td>To meet or assemble</td>
<td></td>
</tr>
<tr>
<td>huikau</td>
<td>Confused, mixed-up or blurred</td>
<td></td>
</tr>
<tr>
<td>hula</td>
<td>To dance</td>
<td></td>
</tr>
<tr>
<td>huli</td>
<td>To reverse, to turn upside down, to disrupt, as in a way of living</td>
<td>huliʻau; a personal turning point</td>
</tr>
<tr>
<td>huliuau</td>
<td>A turning point; a time of change</td>
<td></td>
</tr>
<tr>
<td>ʻiako</td>
<td>The “yoke” or outrigger boom of a Hawaiian canoe, a prominent part of the canoe.</td>
<td></td>
</tr>
<tr>
<td>ʻiewe</td>
<td>The afterbirth; a placenta</td>
<td></td>
</tr>
<tr>
<td>Hawaiian Word or Phrase</td>
<td>Description</td>
<td>Related Terms</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>‘i‘ini</td>
<td>To desire strongly, to yearn for</td>
<td></td>
</tr>
<tr>
<td>‘ike</td>
<td>To see, know, feel, perceive, experience; also comprehension, knowledge, awareness, understanding, wisdom</td>
<td></td>
</tr>
<tr>
<td>‘ike Hawai‘i</td>
<td>Knowledge of things Hawaiian; cultural knowledge</td>
<td></td>
</tr>
<tr>
<td>‘ike ‘āina</td>
<td>Knowledge of the land; in some cases such knowledge is received directly from the land, not through an intermediary</td>
<td></td>
</tr>
<tr>
<td>iwi</td>
<td>Bones; the bones of the dead, a most cherished possession.</td>
<td></td>
</tr>
<tr>
<td>ka pae ‘āina o Hawai‘i</td>
<td>The Hawaiian archipelago of islands</td>
<td></td>
</tr>
<tr>
<td>kāhili</td>
<td>A feather standard, symbolic of royalty; held in the presence of the ali‘i chiefs</td>
<td></td>
</tr>
<tr>
<td>kahua</td>
<td>A foundation, a platform</td>
<td></td>
</tr>
<tr>
<td>ka‘ikena Hawai‘i</td>
<td>A Hawaiian view, or a way of knowing that is Hawaiian; also, knowledge of things Hawaiian</td>
<td></td>
</tr>
<tr>
<td>kai</td>
<td>The ocean, or salt water</td>
<td></td>
</tr>
<tr>
<td>kāko‘o</td>
<td>To uphold, to support or assist; also a person who supports</td>
<td></td>
</tr>
<tr>
<td>kākou</td>
<td>Together, collectively</td>
<td></td>
</tr>
<tr>
<td>kalo</td>
<td>Taro, <em>Colocasia esculenta</em>, a plant cultivated since ancient times for food, with very strong cultural significance</td>
<td></td>
</tr>
<tr>
<td>kama‘āina</td>
<td>A child of the land; native-born in Hawai‘i</td>
<td></td>
</tr>
<tr>
<td>kamani</td>
<td>A large tree, <em>Calophyllum inophyllum</em> that produces fruits and is used for wood</td>
<td></td>
</tr>
<tr>
<td>kamepíula</td>
<td>A computer (modern Hawaiianization of an English word)</td>
<td></td>
</tr>
<tr>
<td>kanaka</td>
<td>A human being, a person; also, the population (plural kānaka)</td>
<td></td>
</tr>
<tr>
<td>kanaka makua</td>
<td>A young person who is mature beyond their years, with self-directedness and initiative. (See Puku‘i, Haertig &amp; Lee, 1972)</td>
<td></td>
</tr>
<tr>
<td>Kanaka Maoli</td>
<td>A person who is native, indigenous or a person who is “real” and “true”; a term used by the indigenous people of Hawai‘i to refer to themselves (the original inhabitants of the Hawaiian Islands, prior to 1775). Plural is Kānaka Maoli.</td>
<td></td>
</tr>
<tr>
<td>Kāne</td>
<td>A leading figure among the Hawaiian akua; known for his ability to bring forth life-giving waters: Ka Wai Ola a Kāne</td>
<td></td>
</tr>
<tr>
<td>Hawaiian Word or Phrase</td>
<td>Description</td>
<td>Related Terms</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
<tr>
<td><em>kani ka pila</em></td>
<td>To sing and play music together; literally, to play a stringed instrument</td>
<td></td>
</tr>
<tr>
<td><em>kaona</em></td>
<td>Hidden meaning, or concealed reference, as is typical in Hawaiian poetry and song</td>
<td></td>
</tr>
<tr>
<td><em>kapa</em></td>
<td>Paper-like cloth made from <em>wauke</em> or other plant fibers such as the bark of the <em>hau</em> tree</td>
<td></td>
</tr>
<tr>
<td><em>kapena</em></td>
<td>Captain of a canoe or a ship</td>
<td></td>
</tr>
<tr>
<td><em>kapu</em></td>
<td>Sacred, prohibited, taboo; set apart for restricted purposes</td>
<td></td>
</tr>
<tr>
<td><em>kauhale</em></td>
<td>Group of houses comprising a Hawaiian home</td>
<td></td>
</tr>
<tr>
<td><em>keiki</em></td>
<td>A child</td>
<td></td>
</tr>
<tr>
<td><em>kī</em></td>
<td>A plant, <em>Cordyline fruticosa</em>, with many uses and high cultural significance; also known as ti plant</td>
<td></td>
</tr>
<tr>
<td><em>kīhei</em></td>
<td>A triangular garment worn over the shoulder, often used in ceremony</td>
<td></td>
</tr>
<tr>
<td><em>kiʻi</em></td>
<td>An image, statue, picture or photograph; a representational likeness</td>
<td></td>
</tr>
<tr>
<td><em>koa</em></td>
<td>The largest of the native forest trees, <em>Acacia koa</em>; also meaning brave, strong, valiant</td>
<td></td>
</tr>
<tr>
<td><em>kōkua</em></td>
<td>To help or assist; one who helps or assists</td>
<td></td>
</tr>
<tr>
<td><em>kou</em></td>
<td>Yours; belonging to you</td>
<td></td>
</tr>
<tr>
<td><em>kū</em></td>
<td>To stand, to stand up; also, “in a state of”</td>
<td></td>
</tr>
<tr>
<td><em>kuahiwi</em></td>
<td>The mountains; figuratively, rural areas</td>
<td></td>
</tr>
<tr>
<td><em>kuahu</em></td>
<td>An altar, often made of stone</td>
<td></td>
</tr>
<tr>
<td><em>kuʻana ʻike</em></td>
<td>A Hawaiian worldview, or a way of knowing that is Hawaiian</td>
<td></td>
</tr>
<tr>
<td><em>kūʻē</em></td>
<td>To oppose, to resist, to protest; to hold an opposite meaning</td>
<td></td>
</tr>
<tr>
<td><em>kuʻu</em></td>
<td>Beloved; as in <em>kuʻuhoa</em>, a beloved friend</td>
<td></td>
</tr>
<tr>
<td><em>kūkākūkā</em></td>
<td>To discuss, to negotiate</td>
<td></td>
</tr>
<tr>
<td><em>kuleana</em></td>
<td>A right, a privilege, a responsibility, a concern; also a person’s small plot of land to care for</td>
<td></td>
</tr>
<tr>
<td><em>kumu</em></td>
<td>Foundation or source; a teacher; the trunk of a tree</td>
<td></td>
</tr>
<tr>
<td><em>kupukupu</em></td>
<td>A fern; the first to grow in volcanic rock in the years after a lava flow.</td>
<td></td>
</tr>
<tr>
<td>Hawaiian Word or Phrase</td>
<td>Description</td>
<td>Related Terms</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
<tr>
<td>kūpuna</td>
<td>Elders or ancestors; those who have come before. The proper spelling for a single member of the kūpuna is “kupuna.”</td>
<td>‘Ōlelo kūpuna is a way of referring to the Hawaiian language, specifically the way that the ancestors spoke and thought.</td>
</tr>
<tr>
<td>lāhui</td>
<td>A great company of people; a nationality</td>
<td></td>
</tr>
<tr>
<td>lāʻau</td>
<td>Medicine of all kinds; traditionally from plant sources</td>
<td></td>
</tr>
<tr>
<td>lāma</td>
<td>An endemic variety of ebony, <em>Diospyros sandwicensis</em>; a hardwood tree</td>
<td></td>
</tr>
<tr>
<td>lauhala</td>
<td>The leaves of the hala tree <em>Pandanus tectorius</em>; often used for weaving</td>
<td></td>
</tr>
<tr>
<td>laulima</td>
<td>Cooperation, joint action</td>
<td></td>
</tr>
<tr>
<td>lawaiʻa</td>
<td>Fisherman, a fishing technique; to catch fish</td>
<td></td>
</tr>
<tr>
<td>lawe</td>
<td>To take or to undertake; to accept (as a duty); to acquire</td>
<td></td>
</tr>
<tr>
<td>lawena</td>
<td>An active, gerund form of the word lawe, to take</td>
<td></td>
</tr>
<tr>
<td>lehua</td>
<td>The flower of the ʻōhiʻa lehua tree <em>Metrosideros collina</em> subsp. <em>polymorpha</em></td>
<td></td>
</tr>
<tr>
<td>leʻaleʻa</td>
<td>To have a good time; fun</td>
<td></td>
</tr>
<tr>
<td>lei</td>
<td>A garland or wreath; often worn about the neck</td>
<td></td>
</tr>
<tr>
<td>leina</td>
<td>To spring, leap or bound; a place to leap from</td>
<td></td>
</tr>
<tr>
<td>liko</td>
<td>The bud of a lehua blossom on an ʻōhiʻa lehua tree; also called likolehua</td>
<td></td>
</tr>
<tr>
<td>loea</td>
<td>Skill, ingenuity, cleverness; an expert or skilled person</td>
<td></td>
</tr>
<tr>
<td>loʻi</td>
<td>An irrigated terrace for kalo or for rice</td>
<td>loʻi kalo; a taro patch</td>
</tr>
<tr>
<td>loko iʻa</td>
<td>A traditional fishpond</td>
<td></td>
</tr>
<tr>
<td>lolouila</td>
<td>A computer, literally “lightning brain”</td>
<td></td>
</tr>
<tr>
<td>lūʻau</td>
<td>Young taro leaf tops, especially baked with coconut cream and squid or octopus; also the tourist name for a Hawaiian pāʻina (feast) where lūʻau is often served.</td>
<td></td>
</tr>
<tr>
<td>mahalo</td>
<td>Thanks, gratitude; to thank</td>
<td></td>
</tr>
<tr>
<td>mahalo ʻia</td>
<td>With gratitude, with respect and gratefulness</td>
<td></td>
</tr>
<tr>
<td>māhelehehe</td>
<td>A division; to divide, as in land division; also, a piece or a chapter</td>
<td></td>
</tr>
<tr>
<td>Hawaiian Word or Phrase</td>
<td>Description</td>
<td>Related Terms</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
<tr>
<td><em>ma'a</em></td>
<td>Accustomed to, familiar with</td>
<td></td>
</tr>
<tr>
<td><em>makahiki</em></td>
<td>A year; also an ancient seasonal festival celebrated annually and lasting about four months</td>
<td></td>
</tr>
<tr>
<td>* makaʻala*</td>
<td>Alert, vigilant, watchful, wide awake</td>
<td></td>
</tr>
<tr>
<td><em>makana</em></td>
<td>A gift</td>
<td></td>
</tr>
<tr>
<td><em>makawalu</em></td>
<td>Numerous, in great quantities; literally, with eight eyes</td>
<td></td>
</tr>
<tr>
<td><em>makua</em></td>
<td>A parent or any relative of the parent’s generation</td>
<td></td>
</tr>
<tr>
<td><em>malaʻai</em></td>
<td>A garden for growing food</td>
<td></td>
</tr>
<tr>
<td><em>mālama</em></td>
<td>To take care of, to attend to; to preserve or protect; also a custodian or caretaker <em>Mālama kou kuleana</em>; to take care of one’s responsibilities</td>
<td></td>
</tr>
<tr>
<td><em>mālama ʻāina</em></td>
<td>To take care of the land, to give back to the land; service learning</td>
<td></td>
</tr>
<tr>
<td><em>malo</em></td>
<td>A man’s loincloth</td>
<td></td>
</tr>
<tr>
<td><em>māmaki</em></td>
<td>A small native tree, <em>Pipturus albidus</em>, yielding fruit and bark for use</td>
<td></td>
</tr>
<tr>
<td><em>mamo</em></td>
<td>A descendant or posterity; figuratively, a type of blossom or flower</td>
<td></td>
</tr>
<tr>
<td><em>mana</em></td>
<td>Supernatural or divine power</td>
<td></td>
</tr>
<tr>
<td><em>māna</em></td>
<td>A chewed mass; food chewed by an adult for a child; also short for <em>haumāna</em>, a student or pupil</td>
<td></td>
</tr>
<tr>
<td><em>manaʻo</em></td>
<td>Thought, idea, belief, opinion, theory, estimate, intention, meaning</td>
<td></td>
</tr>
<tr>
<td><em>manaleo</em></td>
<td>A native speaker; literally, inherited language</td>
<td></td>
</tr>
<tr>
<td><em>manu</em></td>
<td>A bird, any winged creature</td>
<td></td>
</tr>
<tr>
<td><em>manu</em></td>
<td>The endpieces at the bow and stern of a Hawaiian sailing canoe</td>
<td></td>
</tr>
<tr>
<td><em>mau</em></td>
<td>To persist, renew, perpetuate; steady, continuing as is the custom <em>Mau a mau or mau loa</em>; in perpetuity, forever</td>
<td></td>
</tr>
<tr>
<td><em>mele</em></td>
<td>A song</td>
<td></td>
</tr>
<tr>
<td><em>mihi</em></td>
<td>To repent, to apologize, to confess; remorse</td>
<td></td>
</tr>
<tr>
<td><em>milo</em></td>
<td>A tree, <em>Thespesia populnea</em>, used for shade, medicine, dye, oil and other purposes</td>
<td></td>
</tr>
<tr>
<td><em>moena</em></td>
<td>A mat for lying or sleeping; a resting place; also figuratively, a gathering place for modern-day students</td>
<td></td>
</tr>
<tr>
<td><em>moʻokūʻauhau</em></td>
<td>Genealogy; genealogical story; often recited</td>
<td></td>
</tr>
<tr>
<td>Hawaiian Word or Phrase</td>
<td>Description</td>
<td>Related Terms</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
<tr>
<td>moʻolelo</td>
<td>Story, tale, myth, history, tradition, literature, legend, chronicle, log</td>
<td></td>
</tr>
<tr>
<td>moʻopuna</td>
<td>Grandchildren; descendants, posterity</td>
<td></td>
</tr>
<tr>
<td>moʻowahine</td>
<td>A deity found in watery places</td>
<td></td>
</tr>
<tr>
<td>moku</td>
<td>A district, an island or an islet</td>
<td></td>
</tr>
<tr>
<td>mū</td>
<td>Silent; to shut the lips and make no sound</td>
<td></td>
</tr>
<tr>
<td>muʻo</td>
<td>The bud of a leaf, about to unfurl</td>
<td></td>
</tr>
<tr>
<td>naʻau</td>
<td>Intestines, bowels, gut, mind, heart, affections of the heart or mind; mood, temper, feelings</td>
<td></td>
</tr>
<tr>
<td>nalu</td>
<td>A wave, the surf on the ocean</td>
<td></td>
</tr>
<tr>
<td>nane</td>
<td>A riddle, a puzzle, a parable, an allegory</td>
<td></td>
</tr>
<tr>
<td>nīnau</td>
<td>To question (v.), or, a question (n.)</td>
<td></td>
</tr>
<tr>
<td>niu</td>
<td>The coconut tree or any of its parts, <em>Cocos nucifera</em></td>
<td></td>
</tr>
<tr>
<td>noʻeau</td>
<td>Released of restrictions, free of taboo, profane</td>
<td></td>
</tr>
<tr>
<td>noʻonoʻonui</td>
<td>Deep reflection, thought or concentration; to consider mentally or to meditate</td>
<td></td>
</tr>
<tr>
<td>noni</td>
<td>A tree shrub, <em>Morinda citrifolia</em> known as the indian mulberry; Hawaiians obtained dyes and medicine from many parts of the tree</td>
<td></td>
</tr>
<tr>
<td>ʻohana</td>
<td>The family, relatives, the kin group or the extended family clan</td>
<td></td>
</tr>
<tr>
<td>ʻōhiʻa</td>
<td>A tree also called ʻōhiʻa lehua (after its lehua blossoms), <em>Metrosideros polymorpha</em></td>
<td></td>
</tr>
<tr>
<td>ʻōlelo</td>
<td>Language, speech, word, quotation, statement</td>
<td></td>
</tr>
<tr>
<td>ʻŌlelo Hawaiʻi</td>
<td>The indigenous Hawaiian language, including all of its dialects</td>
<td></td>
</tr>
<tr>
<td>ʻŌlelo Noʻeau</td>
<td>A wise saying, a Hawaiian proverb; many were collected from the people of Kaʻū and recorded by Mary Kawena Pukuʻi</td>
<td></td>
</tr>
<tr>
<td>ʻōlena</td>
<td>Turmeric, also called <em>Curcuma domestica</em>; used for medicine, plant dye and occasional food</td>
<td></td>
</tr>
<tr>
<td>ʻoli</td>
<td>Joy, happiness, pleasure</td>
<td></td>
</tr>
<tr>
<td>oli</td>
<td>A chant; to recite a chant</td>
<td></td>
</tr>
<tr>
<td>ʻōpio</td>
<td>Youth, youngsters</td>
<td></td>
</tr>
<tr>
<td>one hānau</td>
<td>Literally, the sands of one’s birth; figuratively, one’s homeland</td>
<td></td>
</tr>
<tr>
<td>Hawaiian Word or Phrase</td>
<td>Description</td>
<td>Related Terms</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
<tr>
<td>pāhoehoe</td>
<td>A smooth, unbroken type of lava that creates rope-like rock formations</td>
<td></td>
</tr>
<tr>
<td>paniolo</td>
<td>A Hawaiian cowboy</td>
<td></td>
</tr>
<tr>
<td>papahana</td>
<td>A project; also a curriculum</td>
<td></td>
</tr>
<tr>
<td>peʻa</td>
<td>A sail or a modern tent made of sailcloth</td>
<td></td>
</tr>
<tr>
<td>Pelekane</td>
<td>Britain or England; similar to Pelekania for Beretania, or Brittania.</td>
<td>‘Ōlelo Pelekane; the English language</td>
</tr>
<tr>
<td>piko</td>
<td>The navel, the umbilicus; figuratively, the source or center</td>
<td>Hoʻi i ka piko; to return to the source</td>
</tr>
<tr>
<td>pili</td>
<td>To cling, stick to, adjoin; to be close to, bonded</td>
<td></td>
</tr>
<tr>
<td>poʻe kahiko</td>
<td>The people of old; ancient Hawaiians</td>
<td></td>
</tr>
<tr>
<td>pōhaku</td>
<td>Rock, stone, mineral</td>
<td></td>
</tr>
<tr>
<td>pono</td>
<td>Goodness, rightness, moral uprightness</td>
<td></td>
</tr>
<tr>
<td>ponoʻole</td>
<td>Lacking in pono</td>
<td></td>
</tr>
<tr>
<td>pūhala</td>
<td>The tree <em>Pandanus tectorius</em>, also known as hala</td>
<td></td>
</tr>
<tr>
<td>pūkoʻa</td>
<td>A coral reef; the head of a coral reef</td>
<td></td>
</tr>
<tr>
<td>pūpū</td>
<td>Shells from marine or land creatures; the lei pūpū that come Niʻihau are renowned for their fine handwork and natural beauty.</td>
<td></td>
</tr>
<tr>
<td>tēnā</td>
<td>A Hawaiian learning system, most recently in use on the island of Niʻihau</td>
<td></td>
</tr>
<tr>
<td>tūtū</td>
<td>A grandparent</td>
<td></td>
</tr>
<tr>
<td>ule hala</td>
<td>Cordage woven from plants</td>
<td></td>
</tr>
<tr>
<td>wahi pana</td>
<td>A storied place; a place told of in legend</td>
<td></td>
</tr>
<tr>
<td>waʻa</td>
<td>A canoe; either a double-hulled rough hewn sailing canoe as made in the Polynesian tradition, or a single-hulled canoe paddled by a group of</td>
<td></td>
</tr>
<tr>
<td>wai</td>
<td>Water of any kind other than sea water</td>
<td></td>
</tr>
<tr>
<td>waiwai</td>
<td>Wealth, prosperity or figuratively, true value beyond money; literally, an abundance of fresh water</td>
<td></td>
</tr>
<tr>
<td>waiwī</td>
<td>Strawberry guava, <em>Psidium cattleianum</em>; also <em>kuawa</em></td>
<td></td>
</tr>
<tr>
<td>wauke</td>
<td>The paper mulberry, <em>Broussonetia papyrifera</em>; its bark was made into cloth for daily uses</td>
<td></td>
</tr>
<tr>
<td>wehewehe manaʻo</td>
<td>To present and explain one’s opinion formally</td>
<td></td>
</tr>
<tr>
<td>Hawaiian Word or Phrase</td>
<td>Description</td>
<td>Related Terms</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>welina</td>
<td>A greeting of affection, similar to <em>aloha</em></td>
<td></td>
</tr>
<tr>
<td>wā</td>
<td>An era, or a span of time; a set time period during the day</td>
<td></td>
</tr>
<tr>
<td>wā kahiko</td>
<td>Ancient times; pre-contact era</td>
<td></td>
</tr>
</tbody>
</table>
References


International Program on Traditional Ecological Knowledge, & International Association for the Study of Common Property. Meeting. (1993). Traditional ecological knowledge: Concepts and cases. IDRC.


Kanahele, P. K. (2005). I am this land, and this land is me. *Hūlili: Multidisciplinary research on Hawaiian well-being, 2*(1), 21-30.


Stannard, D. E. (1989). *Before the horror: The population of Hawai‘i on the eve of Western contact*. Honolulu, HI: Social Science Research Institute, University of Hawai‘i.


