

Toward a Framework for ‘Āina-Based Pedagogies: A Hawai‘i Approach to Indigenous Land-Based Education

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‘Āina-based initiatives are not only proliferating in Hawai‘i communities, but also in academic institutions where interest in place-based education, sustainability education, and STEM has increased. In an effort to uphold the integrity of ‘āina and promotes its integration into PreK-20 learning settings, this article describes characteristics of ‘āina-based pedagogies as a Hawai‘i approach to Indigenous land-based education. This research presents ancestral Hawaiian principles of ‘āina-based pedagogies, along with the learning environments that ‘āina-based education occurs in, common instructional approaches, fields of study, and purposes of application. Findings from this study ground ‘āina-based learning in a Kanaka ‘Ōiwi perspective and may assist others in designing ‘āina-based learning experiences, strengthening their educational initiatives, and evaluating their programmatic outcomes.

Keywords: ‘Āina-based education, Indigenous land-based education, place-based education, ‘Ōiwi agency

INTRODUCTION

As Hawaiians, we have a powerful kinship to the ‘āina. This familial connection continually reminds us of our kuleana (responsibility) to each other and the planet. The ‘āina is as much a theater for learning as it is a repository of life. ‘Āina can be a teacher, a classroom, and a living laboratory for education in next-century skills, sustainability, and self-determination. (Ledward, 2013, p. 35)

The term ‘āina¹-based education has only recently emerged in the fields of education and educational research, whereas the values and practices that undergird ‘āina-based education have been exercised by generations of Kānaka ‘Ōiwi². ‘Āina-based pedagogies include dynamic and interdisciplinary processes of learning and teaching that hail from the natural landscapes and oceanscapes of Hawai‘i’s environment. These processes, which emphasize an interconnected relationship between Kānaka ‘Ōiwi and the ‘āina, draw upon place-specific intergenerational knowledge systems, language, and customary practices to frame curricula for all learners. In Ledward’s (2013) study of ‘āina-based education in the dryland forest of Ka‘ūpūlehu on the west side of Hawai‘i Island, he describes students’ learning alongside community leaders and scientists, and “coming to appreciate their ‘āina as a rich source of knowledge and a launch-pad for future career aspirations” (Ledward, 2013, p. 38). He suggests that ‘āina-based learning can guide future educational programs and initiatives

- through the sharpening of people’s critical thinking and problem-solving skills through firsthand experience with the ‘āina—linking newly-acquired knowledge with enduring cultural principles,
- by understanding long-term consequences of people’s actions, as well as their dependence on available resources, and
- as sites for self-determination through developing a kinship and kuleana to Hawai‘i which may lead to civic engagement and political action (Ledward, 2013).

‘Āina-based initiatives, then, are emerging as catalysts for transformative praxis—empowering Kānaka ‘Ōiwi to enact agency (G. Smith, 1997; 2005).

In 2014, *Decolonization: Indigeneity, Education & Society* published a special issue on the topic of land-based education. The editors state, “If colonization is fundamentally about dispossessing Indigenous peoples from land, decolonization must involve forms of education that reconnect Indigenous peoples to land and the social relations, knowledges and languages that arise from the land” (Wildcat et al., 2014, p. i). Reconnecting Indigenous peoples to the land, social relations, knowledges and languages can be achieved through ‘āina-based education. However, in my review of the literature, I have not found a comprehensive framework that offers detailed pedagogy for ‘āina-based learning. This missing piece presents an opportunity for Kānaka ‘Ōiwi to define what ‘āina-based education entails and the desired outcomes in the context in which it occurs. This paper addresses the following questions in order to articulate characteristics of ‘āina-based education:

- What are the foundational ancestral principles of ‘āina-based pedagogies?
- How are the ancestral principles of ‘āina-based pedagogies given meaning through ‘āina-based education?

THEORETICAL FRAMEWORK

The traditional principles of traditional knowledge...remain fixed and provide the framework within which new experiences and situations are understood and given meaning. As such, these principles are the means by which cultural knowledge becomes remade and given meaning in our time. (Carl Urion, as cited in Stewart-Harawira, 2005, p. 155)

A review of the relevant literature reveals ten principles³ of traditional knowledge that undergird ‘āina-based pedagogies. These principles are critical factors in ‘āina-based programming because they strengthen familial and reciprocal relationships between Kānaka ‘Ōiwi and the ‘āina. By identifying these principles, Kānaka ‘Ōiwi are able to frame their cultural practices and teachings within the context of ancestral values while at the same time bringing the relevance of place-specific cultural knowledges and practices to the present day. From this body of information, it is clear that each principle is inextricably linked to a number of others, thereby illustrating the complexities involved in reclaiming the teachings of our kūpuna to share it with succeeding generations (Young, 1998).

DATA SOURCES AND METHOD

The multifaceted nature of ‘āina-based learning is documented throughout the disciplines of education, public health, natural resource management, agroecology, Hawaiian studies, language studies, anthropology, geography, psychology, and political science, to name a few. To illustrate this multifaceted nature, various academic research articles and book chapters in the fields mentioned above have been gathered from online databases using the following search/key terms: “‘āina-based -learning, -education, -program”, “land-based education”, “biocultural restoration”, “indigenous education”, and “culture-based education”. A spreadsheet⁴ was created to categorize search results according to location and type of program sites, support organizations, and type of research, which include published research and evaluation studies, theses and dissertations, and descriptive studies (see Appendix). The literature in the field of ‘āina-

based education is growing—but programmatic structure, pedagogical approaches, and program findings are not always reported in written form or made available on online sources. Oral presentations by many cultural practitioners and educators who are leaders in their communities are often shared at conferences and community presentations. Therefore, attended presentations and presentation findings are included as a category to affirm the knowledge generated by community-engaged research.

Literary sources as well as conference and community presentation notes were read and coded to build a collective understanding of how researchers and community leaders were describing their ‘āina-based efforts. The following themes surfaced from the data: traditional/ancestral principles, diverse learning environments, the purposes of use in diverse fields, and instructional strategies used in ‘āina-based education.

FINDINGS: DEFINING PEDAGOGIES OF ‘ĀINA-BASED EDUCATION

The term pedagogy refers to the theory and practice of education. Pedagogy includes the context, relationships, purpose, content, instructional strategies, and impact related to the learning setting, and is generally used in its singular form. Although there are similarities in ‘āina-based education across the Hawaiian islands such as emphasis on place-based knowledge and sustainability practices to cultivate healthy people and place, learning approaches may differ significantly depending on the context and the environment. Therefore, the term “pedagogies” is used to describe the diverse learning contexts that ‘āina-based education occurs in, the fields in which it is applied, and the instructional approaches used to guide learners in ‘āina-based relationships. The ancestral principles, learning environments, the purposes of use in diverse fields, and instructional strategies used in ‘āina-based education follows.

Ancestral Principles

Each principle, as presented here, includes descriptions from a range of knowledge holders and how it is enacted through place-specific ‘āina-based efforts.

- Mo‘okū‘auhau—genealogy. The sharing of mo‘okū‘auhau through reciting mele ko‘ihonua, cosmogonic genealogies, is a common practice amongst ‘āina-based programs to acknowledge and connect with the mana of their places.
- ‘Ōlelo Hawai‘i—Hawaiian language. ‘Ōlelo Hawai‘i contains the stories and the shared identity of its people (Warner, 1999) and it connects learners to the history and essence of a particular ‘āina (Oliveira, 2014, 2017; Veincent, 2016).
- Ho‘omana—power, spirituality, reverence, and the ability for Kānaka ‘Ōiwi to “open the mutual flow of mana within a relationship” (Goodyear-Ka‘ōpua, 2013, p. 208). Inherited and acquired mana can be drawn on in ‘āina-based education to develop innovative socio-cultural structures that improve the well-being of Kanaka ‘Ōiwi communities and rebuild community understandings of abundance (Enos, 2015; Maunakea-Forth & Abbott, 2015).
- ‘Āina momona—“productive, healthy, and resilient lands and oceans including the intimate reciprocal relationships our ancestors had with ‘āina...” (Morishige et al., 2018, p. 15). Momona means fat, fertile, or rich as in soil. ‘Āina momona is an important aspect of ‘āina-based education because it provides a foundation to measure the health of ‘āina, kānaka, and the impact of ‘āina-based programming.
- Kuleana—notions of responsibility, roles, and obligations. Kuleana is an important aspect of ‘āina-based education because it is through the exercise of kuleana, that people grow a relationship to their place (Vaughan, 2018).
- Aloha ‘āina—“...an unswerving dedication to the health of the natural world and a staunch commitment to political autonomy” (Goodyear-Ka‘ōpua, 2013, p. 32). Aloha ‘āina is an important aspect to ‘āina-based education because it simultaneously expresses a commitment to the health of the ‘āina as well as the struggle for Kānaka ‘Ōiwi to regain sovereignty over their governing systems.

- Maui ola—a concept of Hawaiian well-being that embraces physical and spiritual facets of holistic health. Maui ola is an important aspect of ‘āina-based education because interdependent person-environment relationships are necessary for Kanaka ‘Ōiwi well-being (Vaughan, 2018).
- ‘Ike kupuna—knowledge of elders and ancestors. ‘Ike kupuna is an important aspect of ‘āina-based education because inherent in intergenerational knowledge systems are unique characteristics, patterns, and relationships of each place.
- Mo‘olelo—stories, traditions, literature, and historical accounts. Mo‘olelo is an important aspect of ‘āina-based education because the transmission of traditions and stories is essential to Kanaka ‘Ōiwi identity and connection to place (Oliveira & Wright, 2016).
- ‘Ohana—family or community; often translated as “offshoots of the family stalk” in reference to the ‘ohā or offshoots of the kalo plant (Handy & Pukui, 1972). ‘Ohana is an important aspect of ‘āina-based education because it is a means to rebuild self-sufficient community-based food systems.

Learning Environments

The learning environments in which ‘āina-based education occurs are cultural kīpuka where Hawaiian culture can be regenerated and revitalized in contemporary settings (McGregor, 2006). ‘Āina-based education has been observed across diverse learning environments which include, but are not limited to

- natural ecosystems—native forests and ocean/reef systems,
- regenerative community food systems⁵—lo‘i kalo, loko i‘a, ‘āina malo‘o: dryland and rain-fed field systems, organic farms, māla‘ai, community gardens, medicine gardens, food forests, and school gardens,
- home and community life—wahi pana, home gardens, public health centers, and community non-profit organizations, and
- academic institutions—Hawai‘i’s private, public, and charter schools; post-secondary institutions such as the University of Hawai‘i System; and private colleges and universities.

Fields of Study and Purposes of Application

The diversity of settings in which ‘āina-based learning occurs is paralleled by the variety of fields in which it is applied and the purposes for which it is of benefit. These include

- Hawaiian language revitalization (Oliveira, 2017),
- sustainability and STEM education (Hawai‘i Leadership Forum, 2019),
- Kanaka ‘Ōiwi and Indigenous leadership (Ah Nee-Benham, 2016; Aldana, 2019; Beamer, 2013; Cajete, 2015; Osorio, J. K., & Osorio J., 2016; Oliveira, 2017), native plant restoration and invasive species control (Sato & Cavalieri, 2019),
- food sovereignty (Enos, 2015; Goodyear-Ka‘ōpua, 2013; Meyer, 2014; Youth Food Sovereignty Congress, 2018),
- biocultural restoration (Kurashima, Jeremiah, & Ticktin, 2017; Lincoln et al., 2018; Morishige et al., 2018),
- workforce development (Maunakea-Forth & Abbott, 2015),
- epigenetics, economics, and public health (A. Maunakea & Juarez, 2018; Fujita, Braun, & Hughes, 2004; Oshiro, 2019),
- intergenerational education (Nāone, 2008, S. Maunakea, 2014), and
- cultural literacy (ho‘omanawanui, 2008).

Instructional Approaches

Instructional approaches of ‘āina-based learning are guided by ‘Ōiwi processes of knowing and doing such as

- ceremonial protocol to remind learners of their pilina and accountability to place, genealogy, and akua (Goodyear-Ka‘ōpua, 2013),

- kilo—keen place-based observation over an extended period of time “to build a collective and intimate understanding of biocultural landscapes and seascapes” (Morishige et al., 2018, p. 9),
- ma ka hana ka ‘ike—learning through doing (Lincoln et al., 2018; Meyer, 2014),
- laulima—many hands working together to start and complete tasks. Laulima broadly includes the organizations that advocate for and help build capacity of ‘āina sites to mālama their own biocultural resources (Kua‘āina Ulu ‘Auamo, 2019), and
- ‘Ōiwi agency—blending the use of ‘Ōiwi and Western frameworks to cultivate abundance for current and future generations (Beamer, 2014; Kealiikanakaoleohaililani & Giardina, 2016).

SIGNIFICANCE: THE NEED TO CLAIM KANAKA ‘ŌIWI PROCESSES OF TEACHING

Kanaka ‘Ōiwi and Indigenous scholars assert the need to claim Indigenous identities, research, language, schooling, and systems to make positive differences in Indigenous lives (ho‘omanawanui, 2008; Kana‘iaupuni, Ledward, & Malone; 2017; Maaka, 2004; L. Smith; 2012). ‘Āina-based initiatives are not only proliferating in Hawai‘i communities, but also in academic institutions where interest in place-based and project-based education; sustainability education; social-emotional learning; science, technology, engineering, and mathematics education (STEM); farm to school; and Nā Hopena A‘o policy has increased (Hawai‘i State Department of Education, 2012, 2017; Hawai‘i Leadership Forum, 2019). The research findings presented in this paper offer components toward a conceptual framework for community leaders, scholars, educators, and cultural practitioners to engage in discussion about the intricacies of ‘āina-based education. Such discussions may help communities evaluate the impact of their programming and lead to further development of their ‘āina-based initiatives.

ENDNOTES

1. ‘Āina encompasses land, earth—that which feeds and that which signifies a sense of homeland relations between people and the land. ‘Ōlelo Hawai‘i, Hawaiian language, words and phrases are used throughout the text. If English explanations for Hawaiian words are needed, see: Pukui M. K., & Elbert S. H. (1986). *Hawaiian dictionary: Hawaiian-English, English-Hawaiian* (revised and enlarged ed.), Honolulu, HI: University of Hawaii Press. Alternatively, search www.wehewehe.org. Hawaiian words and phrases are italicized and/or followed by an English translation only when quoted.
2. Throughout the text, the following terms are used to describe descendants of the native people of ka pae ‘āina Hawai‘i: Kānaka ‘Ōiwi, Kānaka (plural), Kanaka (singular), and Hawaiian. Kanaka, ‘Ōiwi, and Hawaiian are also used as adjectives. When written kanaka (singular) or kānaka (plural), this refers to a person and all of humanity, respectively.
3. Mo‘okū‘auhau, ‘ōlelo Hawai‘i, ho‘omana, ‘āina momona, kuleana, aloha ‘āina, maui ola, ‘ike kupuna, mo‘olelo, and ‘ohana are the ten “ancestral principles” selected from the knowledge base. They are called “ancestral principles” in reference to the values and practices that have been exercised by generations of Kānaka ‘Ōiwi. Furthermore, the ‘āina-based programs discussed in this article have come to recognize these values and practices as guiding principles of their work. With that being said, it should be emphasized that ‘āina-based organizations must consider the values and practices most aligned to their place and context whether they are discussed in this article as an “ancestral principle” or not.
4. The spreadsheet was generated at the time of the study utilizing literature sources and prior knowledge of existing organizations. It is not comprehensive or inclusive of all ‘āina-based programs, reports, or support organizations across ka pae ‘āina ‘o Hawai‘i. Email smauna@hawaii.edu for corrections or additions, mahalo.
5. According to the Rodale Institute (2014, p. 7), “Regenerative organic agriculture improves the resources it uses, rather than destroying or depleting them. It is a holistic systems approach to agriculture that encourages continual on-farm innovation for environmental, social, economic and spiritual well-being.” For the purpose of this article the term regenerative community food systems is used to describe Hawai‘i’s food systems that align with regenerative organic agricultural practices. These include ‘Ōiwi agricultural and aquacultural structures such as lo‘i kalo, loko i‘a, and ‘āina malo‘o field systems that holistically nourish Hawai‘i’s communities in the present day.

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APPENDIX

‘Āina-Based Programs Spreadsheet

‘Āina-based Component	Organization Name/School	Host Organization	Setting	Literature/ Conference Presentations
Assessment/Evaluation	Waipā - Mehana Blaich Masters Thesis	Waipā Foundation	Ahupua'a	Blaich (2003)
Assessment/Evaluation	Waipā - Molly Mamaril Masters Thesis	Waipā Foundation	Ahupua'a	Mamaril (2015)
Educational Program	First Nation Futures Programs	Kamehameha Schools	Multiple	Beamer (2013)
Educational Program	Ho'olauna Programs	Kamehameha Schools	Lo'i Kalo/Loko l'a	ho'omanawanui (2008)
Educational Program	Ho'omāka'ika'i Programs	Kamehameha Schools	Multiple	
Educational Program	'ĀINA In Schools	Kōkua Hawai'i Foundation	School Gardens	
Educational Program	Mauiakama	UHMCC/UHM	Lo'i Kalo/Multiple	Oliveira (2017)
Educational Program	Nā Kilo 'Āina	Nā Kilo 'Āina	Multiple	Morishige et al (2017)
Educational Program	Noho Papa	Edith Kanaka'ole Foundation	Multiple	
Educational Program	Mālama Learning Center	Mālama Learning Center	Multiple	Sato & Cavalieri (2019)
Support Organization	Castle Foundation	Castle Foundation	-	
Support Organization	Consuelo Foundation	Consuelo Foundation	-	
Support Organization	Hau'oli Mau Loa Foundation	Hau'oli Mau Loa Foundation	-	
Support Organization	Kua'aina Ulu 'Auamo	Kua'aina Ulu 'Auamo	-	
Support Organization	Kohala Center	Kohala Center	-	
Support Organization	Kōkua Hawai'i Foundation	Kōkua Hawai'i Foundation	-	
Support Organization	KUPU	KUPU	-	
Support Organization	Mālama 'Āina Foundation	Mālama 'Āina Foundation	-	
Hui/Network	Hawai'i Farm to School Hui	Hawai'i Public Health Institute	-	
Hui/Network	'Āina Ulu	Kamehameha Schools	-	Hannahs (2014)
Hui/Network	Ko'ola'oa 'Āina-based Education Hui	Castle Foundation; various	-	
Other Research	W. K. Lee's Masters Thesis	UH Mānoa	-	Lee (2014)
Other Research	'Āina Ulu Report (2011)	Kamehameha Schools	-	
Other Research	'Āina-based Education Systems Map	Hau'oli Mau Loa/KS/Consuelo/Hawai'i Leadership Forum	-	Hawai'i Leadership Forum (2019)
Program Site	He Moku He Wa'a, He Wa'a He Moku Farm	Kānehūnāmoku Voyaging Academy	Lo'i kalo/'Āina malo'o	Goodyear-Ka'ōpua (2013)
Program Site	Ho'oulu'ulu Kahalu'u	Ho'oulu'ulu Kahalu'u	'Āina malo'o	Lincoln et al. (2018)
Program Site	Ho'okua'aina	Ho'okua'aina	Lo'i kalo	
Program Site	Ho'oulu 'Āina	Kōkua Kalihī Valley	'Āina malo'o, native forest	Mahi (2013); Baker (2018); Aldana (2018)
Program Site	Hui Kū Maoli Ola	Hui Kū Maoli Ola	Native plants	Barboza (2013)
Program Site	Hui Mālama i ke Ala 'Ūlili (huiMAU)	Hui Mālama i ke Ala 'Ūlili (huiMAU)	'Āina malo'o	Peralto (2018); Lincoln et al. (2018)
Program Site	Ka Honua Momona	Ka Honua Momona	Loko l'a	
Program Site	Ka Papa Lo'i 'o Punalu'u	Kamehameha Schools/UH Mānoa	Lo'i kalo	
Program Site	Ka'ala Farm	Ka'ala Farm	Lo'i kalo	
Program Site	Kahana	Kahana	Lo'i kalo	
Program Site	Kāko'o 'Ōiwi	Kāko'o 'Ōiwi	Lo'i Kalo/'Āina malo'o	Aikau & Camvel (2016)
Program Site	Kānehūnāmoku Voyaging Academy	Kānehūnāmoku Voyaging Academy	Wa'a/Lo'i kalo	Goodyear-Ka'ōpua (2013)
Program Site	Keiki and Plow	Keiki and Plow/KS	'Āina malo'o	
Program Site	Keiki o ka 'Āina	Keiki o ka 'Āina	Māla'ai/Lo'i kalo	
Program Site	Ku'u Home Kulāiwi	Ku'u Home Kulāiwi	Lo'i Kalo	
Program Site	Kumano I Ke Ala	Kumano I Ke Ala	Lo'i Kalo	
Program Site	Loko Ea	Loko Ea/KS	Loko l'a	
Program Site	Ma Ka Hana Ka 'Ike	Ma Ka Hana Ka 'Ike	'Āina malo'o/Lo'i kalo	
Program Site	Mālama Hale'iwa Lo'i	Fitzsimmon 'Ohana	Lo'i kalo	
Program Site	MA'O Organic Farms/Farm2Fork	MA'O Organic Farms	'Āina malo'o	K. Maunakea-Forth & Abbott (2015); Enos (2015)
Program Site	Māla Kalu'ulu	Māla Kalu'ulu	'Āina malo'o	Lincoln et al. (2018)
Program Site	Maluaka	Maluaka	'Āina malo'o	Lincoln et al. (2018)
Program Site	Māmaki Farm	Kamehameha Schools	'Āina malo'o	
Program Site	Noho'ana Farm	Noho'ana Farm	Lo'i kalo/Māla'ai	
Program Site	Nā Mea Kūpono	Nā Mea Kūpono	Lo'i kalo	
Program Site	Paepae o He'eia	Paepae o He'eia/KS	Loko l'a	Moehlenkamp et al. (2018)
Program Site	Papahana Kuaola	Papahana Kuaola/KS	Lo'i kalo	Nahale-a, Ruelas, Kon (2015)
Program Site	Ulu Mau Puanui	Ulu Mau Puanui	'Āina malo'o	Lincoln et al. (2018)
Program Site	Ulupō	Hika'alani	Heiau/Lo'i kalo	
Program Site	Waiuanu Farm	Uncle Charlie & Paul Reppun	Lo'i kalo/'Āina malo'o	
Program Site	Waikalua Loko l'a	Pacific American Foundation	Loko l'a	
Program Site	Waipā Foundation	Waipā Foundation	Ahupua'a	Blaich (2003); Vaughan (2018)
Program Sites at Schools	Ka Papa Lo'i 'o Kānewai	Ho'okahe Wai Ho'oulu 'Āina/UH Mānoa	Lo'i kalo	Maunakea (2016)
Program Sites at Schools	Ka Papa Lo'i Project - 'Aihualama	Hāluu Kū Mana	Lo'i kalo	Goodyear-Ka'ōpua (2013)
Program Sites at Schools	Ka'iwakīlōumoku Hawaiian Cultural Center	KS - Kapālama	'Āina malo'o	
Program Sites at Schools	Kahuola	BYU-Hawai'i	Lo'i Kalo/'Āina malo'o	
Program Sites at Schools	Ke Kula Kaiapuni 'o Ānuenuē	Ke Kula Kaiapuni 'o Ānuenuē	Lo'i Kalo	
Program Sites at Schools	Māla'ai: The Culinary Garden of Waimea Middle School	Māla'ai	'Āina malo'o	
Program Sites at Schools	Waipi'o Valley with Uncle Nālei Kahakalau	Kanu O Kā 'Āina PCS	Lo'i kalo	Nāone (2008)
Program Sites at Schools	WCC Nursing Pathways Garden	Windward Community College	'Āina malo'o/Lā'au lapa'au	