

Philosophical Implications of Using an Education for Sustainable Development Framework for Curriculum Innovation in the Galapagos Islands

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Mr. Justin Scoggin

Approved by:

Major Professor: Brant Miller, Ph.D.

Committee Members: Vanessa Anthony-Stevens, Ph.D.; Karla Eitel, Ph.D.;

Erin Murphy-Graham, Ph.D.

Department Administrator: Raymond Dixon, Ph.D.

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Abstract

This study examined Education for Sustainable Development (ESD), an educational philosophy promoted by the United Nations through the Sustainable Development Goals, as the philosophical underpinning of the 2021 contextualized curriculum innovation for the Galapagos Islands. Land Education, an educational philosophy developed by Indigenous scholars, was used as the non-Western lens to conduct a Critical Discourse Analysis using Directed Content Analysis. The analyzed texts were official, published documentation of the 2021 contextualized curriculum innovation, which contains the 2016 Ecuadorian national curriculum, and transcripts of interviews of education and conservation leaders in Galapagos who represented organizations that participated in developing the 2021 curriculum. Codes for the qualitative data analysis were gleaned from the Land Education literature that critique Education for Sustainable Development, which were then organized into natural categories: epistemology, ontology, axiology, and historicity.

Data from this study suggest that education and conservation leaders in Galapagos are divided between those who bolster the ESD-promoted discourse and therefore the 2021 curriculum, and those who question the role of sustainability and development in educational innovation in Galapagos. In addition, both the published documentation of the 2021 curriculum and the interview transcripts suggest validity of the critiques leveled against ESD in the Land Education literature.

Results of the study are significant for the field of education, especially related to the United Nations-led global efforts to implement sustainable development through education. This study dispels misperceptions held in the ESD literature and among conservation and education leaders in Galapagos by providing evidence that suggests that ESD and the many ESD-adjacent educational philosophies, are fundamentally incompatible with Indigenous

education as articulated in the Land Education literature. Being embedded within a settler colonialist worldview, ESD principles are recruited to serve ends consistent with the colonialist project. Further, this study reveals that ESD affirms current power structures by assuming colonial settler stability, thus dispelling the pro-change narrative promoted in the ESD literature and in the 2021 curriculum innovation for Galapagos.

Further implications regarding curriculum content and its implementation can also be gleaned from efforts to make education relevant to the lives of students on small islands. Educational initiatives would benefit from selecting an educational philosophy that has been scrutinized to reveal its epistemological, ontological, axiological perspectives, as well as its view of history, its correspondence to long-term goals of the island's inhabitants, as well as its capacity to engage colonial legacies in education. Results from this study also indicate the value of achieving coherence among all of the system components - textbooks, teacher administrative responsibilities, content, pedagogy, professional development, and assessment.

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Dedication

I could not have achieved success in my PhD journey without generous and unwavering support from my wife Katty and my sons Joshua, Raji, and Ruhi.

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Chapter 1: Introduction and Study Context

The Galapagos Islands

The Galapagos Islands are renowned for being among the world's best-preserved archipelagos. Since the creation of the Galapagos National Park in 1959, over 97% of the land is off limits to human development and the surrounding 198,000 square kilometer Galapagos Marine Reserve solidifies decades of conservation efforts. The United Nations Educational, Scientific and Cultural Organization's (UNESCO) recognition of Galapagos as its first World Heritage Site in 1978 and as a Biosphere Reserve in 1985, along with continuing conservation efforts, have made the Galapagos Islands known for its unique flora and fauna. The strong local economy attracts enough new inhabitants, often fleeing precarious economic conditions on the Ecuadorian mainland, that the provincial government put in place a visa system and other measures to limit population growth.

Most Galapagos inhabitants have immigrated there since the 1990's. Nearly all immigrants arrive as staff or family of staff of the many private and public conservation organizations, or are Ecuadorians looking for economic opportunity. The purpose of the arrival of each person often defines their vision for the archipelago. Conservation of the natural environment is a broadly shared value among both groups, but its meaning and importance differ considerably for each group. "[T]he hegemonic understanding of nature as global heritage eclipses the voices of residents who dare to challenge it" (Hennessy, 2019, p. 208) accurately describes the divergent perspectives on the environment and conservation in the Galapagos Islands. Instead of characterizing the Galapagos Islands as a pristine paradise, a conservation achievement or tourist destination, it is important to

consider them as a socio-economic system to bring to light the challenges faced by the local populations and to the natural environment (Román et al., 2021).

The conservation-minded community in Galapagos has operated in consonance with the public discourse around sustainable development promoted by the United Nations and its agencies. Nevertheless, UNESCO placed the Galapagos Islands on the list of World Heritage in Danger sites in 2007 in part because of heightened threats to the health of the islands due to invasive species, increased tourism, and immigration (United Nations, 2007). In 2010 UNESCO removed Galapagos from the World Heritage in Danger list but still appealed for improved education (Román et al., 2021) as part of the strategy to improve an inadequate biosecurity chain of inspection and control, an unclear tourism strategy and weaknesses detected in the ability of the National Park to fulfill its mandate (UNESCO, 2010).

Education in Galapagos

Education on the Galapagos Islands can be characterized as fraught with challenges including historically limited professional development opportunities, exam-oriented and passive instructional methodologies, inadequate physical infrastructure, and misdirected school administration (Galapagos Conservancy, 2019). Tourism in the Galapagos islands generates significant financial resources which are largely kept in private hands or sent back to national coffers, and what is designated for local investment is scarcely funneled towards formal education. Schools have inadequate libraries, very few teachers can use the Internet in their classrooms due to a lack of connectivity and computers, many teachers work with 35 students or more in their classrooms, they are encouraged to adhere to prescriptive textbooks and traditional assessment regimens, laboratories are generally ill-equipped and logistical hurdles often discourage teachers from conducting classes outside of classrooms.

There are no school organizational health improvement plans in place. Fortunately, the worst infrastructure inadequacies have been overcome for the 20 schools, 375 educators, and 30 school administrators that serve approximately 7,500 students (Galapagos Conservancy, 2019). Ongoing challenges have been compounded during the COVID-19 pandemic and new challenges have arisen. For example, many teachers were forced to use the WhatsApp application (an instant messaging and voice-over-IP service) as their content delivery method for months (Román et al., 2021). A community intranet initiative has recently been implemented that allows participating schools to share free off-line resources and interactively access a growing library of resources (Urquiza et al., 2019).

Conservation organizations have traditionally remained aloof to formal education on the Galapagos Islands. Typical of other remote provinces of Ecuador, educational concerns in the Galapagos have revolved around improving school infrastructure, recruiting and training teachers, including all children in the educational system, and attaining academic quality relative to Ecuadorian mainland schools. The natural living laboratory offered by the Galapagos National Park and the Marine Reserve have therefore played an insignificant role in education in Galapagos. Much more than championing conservation of the islands, young adults educated in the Galapagos school district often lament the poor Internet service, and the general lack of infrastructure compared to the mainland. Seeing the inverse correlation between improved material development and maintaining the level of conservation that makes Galapagos special is often challenging.

In 2010, UNESCO appealed for improved education in Galapagos and “to systematically address the various factors affecting the state of conservation of the property” (UNESCO, 2010). Ripe for changes, 2016 was an auspicious year for education in Galapagos to be brought more in line with the vision of conservation for the islands.

After conducting a thorough assessment of the state of education in Galapagos that focused on teacher performance in the classroom, the US-based nonprofit conservation

organization Galapagos Conservancy and its local partner the Scalesia Foundation received approval from the Ministry of Education to launch a 5-year school improvement program in 2016. Although the initiative included leadership development for administrators and selected teachers, the program focused on intensive and ongoing professional development for teachers through in-person workshops, coaching, and professional learning circles. The agreement for this program has since been extended and continues to this day. Impacts of the Galapagos Conservancy program have been significant for teachers and administrators in two areas (Galapagos Conservancy, 2019). First, subject area knowledge and teaching methodologies have made measurable improvements across the school system. Second, its very name, the Education for Sustainability in Galapagos Program (ESGP), illustrates the importance it has given to supporting adequate education for the archipelago to achieve sustainable development.

The original professional development plan anticipated fulfilling two education for sustainability (EfS) or Education for Sustainable Development (ESD) (for this study, ESD encompasses EfS, see UNESCO (2012)) goals for the first two years. By its own admission, however, desired outcomes related to basic instructional practices proved to be a heavier lift than anticipated. Galapagos Conservancy discovered that:

The effective use of Education for Sustainability requires an additional shift that has proven challenging for even some of our experienced PD facilitators who did not have prior experience with EfS. During Years 1 and 2, the program encouraged simple connections between lessons and local examples. During Years 3 - 5 the program is helping teachers to develop the ability to make more sophisticated connections between the national curriculum, local examples and sustainability principles. This process has required more technical assistance - both for our PD facilitators and teachers - than we originally anticipated. (Galapagos Conservancy, 2019, p. 34)

The 2016 and 2021 Curricula

Coincidental to the launch of the Education for Sustainability in Galapagos Program (ESGP), in 2016 the Ministry of Education published a new national curriculum which immediately became the framework for the Galapagos Conservancy ESGP. I will briefly outline salient aspects of the curriculum relevant to the context and bound nature of this research.

Education is increasingly conceived as a catalyst for children and youth to “actively apply their knowledge, skills and values in real-world situations to improve quality of life and well-being for themselves, their families, communities and wider society” (Leicht & Byun, 2018, p. 90). A curriculum is a master plan for this purpose: it outlines the philosophical underpinnings of an educational model, articulates its broad and specific objectives, defines learning, and gives direction to all stakeholders, including schools, school districts and beyond. The influence of the curriculum over educational systems cannot be overstated.

The 2016 Ecuadorian national curriculum, obligatory for all pre-kindergarten, kindergarten, primary, and secondary educational institutions in the country, has three elements that take prominence over all others: its national scope with a view towards integration into a globalized world, the value given to celebrating human diversity, and its intended applicability and relevance to students’ local circumstances (Ministerio de Educación del Ecuador, 2016).

Applicability to local circumstances, or Contextualized Teaching and Learning (CTL) (Baker et al., 2009; Perin & Hare, 2010), is the most prominent design element in the 2016 Ecuadorian national curriculum, in which objectives are expressed in terms of key skills, representing a notable change over previous Ecuadorian national curricula that primarily aimed for student knowing and understanding. The 2016 curriculum addresses the objective of bringing educational content and practice closer to the interests and needs of the

students (Ministerio, 2016), “drawing from and building connections between students’ lives and everyday experiences to make the content that is being taught in schools authentic and relevant” (Román et al., 2022, p. 3). Teachers are expected to identify real problem situations experienced by their students from which motivating tasks can be planned. Authentic tasks require students to employ interdisciplinary knowledge to solve problems collaboratively. The curriculum is designed to lead students to gain an ever deeper understanding of their surrounding reality so that school activities become meaningful in their daily lives (Ministerio de Educación del Ecuador, 2016).

The Ministry of Education of Ecuador developed the curriculum and individual schools must bring its design features design closer to the reality of their contexts through the Institutional Educational Project and its corresponding Institutional Curriculum Project, and teachers must negotiate the contents in the space of the classroom, attending to the interests and needs of their students (Ministerio de Educación del Ecuador, 2016). Schools are afforded “pedagogical and organizational autonomy for the development and concretion of the curriculum, the adaptation to the needs of the students and the specific characteristics of their social and cultural context” (Ministerio de Educación del Ecuador, 2016, p. 15).

However significant the 2016 curriculum is for education in Ecuador, it largely fails to establish contextualized education. Beyond broad and generalized statements about connecting education to local circumstances, the curriculum and the corresponding textbooks do not offer a definition of this goal or a vision for its achievement. As an example, the competencies for art require research into new artistic tendencies, proposals, artists, and works of art, which aim to help students gain “skills that make it possible to search for and organize information whenever it is necessary, incorporating it in a meaningful way into the knowledge schemes themselves” (Ministerio de Educación del Ecuador, 2016, p. 50). The curriculum suggests that in addition to classroom artwork, students should be connected to events held locally in the street, in museums, in auditoriums or in other

settings (Ministerio de Educación del Ecuador, 2016). However, the curriculum offers no explanation about how local art events could complement the curriculum, how to take advantage of them, or how to discuss or interpret works or local artistic tendencies.

Beyond sporadic, concrete suggestions in the textbooks to interview a family member, for example, and repeatedly stating that contextualizing the curriculum to student interests and circumstances rests squarely on the shoulders of each school and each teacher, the curriculum and the textbooks fail to offer resources for this task or indicate how it could be carried out. School administrators and teachers receive little guidance, training, or support to achieve contextualization.

Failure to involve students in concerns of local interest undermines their capacity to draw meaningful connections between global, national, and local issues. For governments and civil society, there is no substitute for the immediate surroundings “as the theatre for people’s grassroots participation in democratic governance and agency for sustainable development action” (Leicht & Byun, 2018, p. 178). If Ecuadorian students watch or read national news (there is rarely local news media), it often comes across as distant and abstract. Without basic comprehension of global and national issues, students do not perceive how they are manifested locally and are therefore hindered in becoming active in resolving local issues.

Gruenewald’s (2003a) assertion that people are place-makers mandates schools to help students make meaningful places. However, if schools ignore the local aspect of students’ lives, places will be made without student participation. Bypassing this responsibility leaves students in a position to accept their places as “inevitable products of history” (Gruenewald, 2003, p. 627) and therefore they become complicit in the continuation of unequal power structures and colonial practices over people and the earth.

According to the Ministry of Education of Ecuador, since 1998 different actors in Galapagos have expressed a fervent desire for schools to “prepare citizens who profoundly

understand, value, and appreciate the place where they live” (Ministerio de Educación del Ecuador, 2021a, p. 9). In response to this pressure, the Ministry of Education oversaw the development of an innovation to the national curriculum for Galapagos schools based on the Education for Sustainable Development (ESD) framework. The 2021 curriculum innovation corrects for some of the shortcomings of the 2016 curriculum by rewriting some standards for social studies and science to make them relevant to the exceptional circumstances and needs of Galapagos and by suggesting methodological innovations coherent with ESD.

ESD is promoted by the United Nations as a key element in achieving its 2030 Agenda for Sustainable Development. Because the 2030 Agenda has become a vital framework for education and development programs worldwide, ESD has also become widely implemented. Through the Education for Sustainability in Galapagos Program (ESGP) and the 2021 curriculum innovation for Galapagos, since 2016 ESD has been the central educational philosophy on the Galapagos Islands.

The 2016 national curriculum centers content applicability to local circumstances, a key element of ESD. The archipelago-wide professional development program led by Galapagos Conservancy (ESGP) and the 2021 contextualized curriculum innovation explicitly name education for sustainability (EfS) practices (for this study, ESD encompasses EfS, according to UNESCO (2012)) as their principal philosophical reference. The 2021 contextualized curriculum innovation for Galapagos retains all the standards of the 2016 curriculum and adds a few new standards specific to Galapagos. The key contributions of the 2021 contextualized curriculum innovation is methodological in nature, suggesting that teachers should use a project-based learning approach that values field work and student-led research into circumstances specific to the Galapagos relevant to the curriculum standards (Ministerio de Educación del Ecuador, 2021b).

Sustainable Development

Conservation organizations in Galapagos use language from the development literature that projects a particular worldview specifically regarding the relationship between people and nature. For example, the United Nations Statistical Commission adopted the System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA-EA) at its 52nd session in March 2021. The new accounting system was heralded as a ‘landmark,’ ‘historic,’ and a ‘game changer’ for climate action because it provides a system to “no longer be heedlessly allowing environmental destruction and degradation to be considered economic progress” (UN News, 2021). The UN Secretary General stated that the new language will transform “how we view and value nature” because in the previous system using Gross Domestic Product as the key measure, nature was “degraded without even knowing the value lost” (UN News, 2021). As an example of the benefits of this new accounting system, following the SEEA-EA guidelines, economists have now calculated that pollinators contribute €3.7 billion per year in Europe through crop production (Eurostat, 2021).

The SEEA-EA glossary provides terminology to refer to the environment in a way that counts “nature and the economy together and in the same framework” (UN News, 2021). Key terms in the glossary include ecosystem assets (“contiguous spaces of a specific ecosystem type characterized by a distinct set of biotic and abiotic components and their interactions”) (United Nations, 2022b, p. 2), ecosystem services (“the contributions of ecosystems to the benefits that are used in economic and other human activity”) (United Nations, 2022b, p. 4), natural resources (“includes all natural biological resources (including timber and aquatic resources), mineral and energy resources, soil resources and water resources”) (United Nations, 2022b, p. 7), and use values (“values arising where the benefit

to people is revealed through their direct, personal interaction with the environment or through indirect use”) (United Nations, 2022b, p. 9).

In the world described in the SEEA-EA, ‘Units’ ‘benefit’ from ‘goods’ and ‘services’ provided by assets. Forests are timber which in turn is a resource. Fish are ‘aquatic resources’. ‘Units’ are legally ‘entitled’ to claim the benefits associated with entities’. Such language that reveals an anthropocentric, asset and market-based, monetized, commodity-centered, utilitarian, Western view of the relationship between humanity and the environment is considered “a step towards sustainable development” by high level UN officials (UN News, 2021).

The SEEA-EA accounting system may be recently adopted, but the language is not new. For example, the terms “resources” and “ecosystem services” are used extensively in documentation of the Galapagos National Park (Parque Nacional Reserva Marina de Galápagos, 1998). The SEEA-EA can be considered a step forward as an attempt to move beyond the confines dictated by Gross Domestic Product, and simultaneously as an imposition of a particular worldview. However, far from being exceptional, Sachs (2017) lays out an argument in which such contradictions can be seen throughout the entire UN system.

Sachs (2017) points to the everpresent disconnect between international rhetoric in which countries pull together to declare noble global goals and then retreat to realpolitik to conduct their affairs by responding to domestic capitalist markets. Sachs (2017) affirms that “the economic system of the Global North cannot do without systematic exploitation of nature” (p. 2575). In other words, nobody has figured out how to have development at the scale of countries and continents without economic growth, and economic growth implies environmental degradation: “Development-as-Growth is leading to a planet that is inhospitable to human life” (Sachs, 2017, p. 2575). How else can full approval of the 2030 Agenda be understood “other than a practice in simulation when the same governments

support coal mining, land grabbing or the international finance industry?” (Sachs, 2017, p. 2575).

Seven of the Sustainable Development Goals (SDG's) address human vulnerability and another five address ecological vulnerability, and nearly all of the SDG's avoid the traditional development rhetoric of progress as economic growth. Development then, is reframed as a series of human rights and ecological imperatives. Goal 8, on the other hand, advocates for “sustained, inclusive and sustainable economic growth ... at least 7 per cent gross domestic product growth per annum in the least developed countries” and upholds World Trade Organization trade agreements (United Nations, n.d.). The SDG's simultaneously embrace development-as-social-policy led by the United Nations Development Program (UNDP) and development-as-growth led by the World Bank and the International Monetary Fund as UN specialized agencies, and the World Trade Organization. In fact, the Chief Executive Board of the UN twice annually “brings together executive heads from various UN bodies (agencies, programmes, funds), the WTO and Bretton Woods institutions” to coordinate their actions and policies (World Trade Organization, n.d.). In the UN system, social policy goals can only be achieved through economic growth and its implied environmental devastation. Even so-called green growth or sustainable development fail to find a path to prosperity that does not involve economic growth.

The leadership role of the United Nations on many global issues such as peace and security, human rights, environment and climate action, international law, humanitarianism, food and agriculture, air transport, international labor, health, intellectual property, meteorological data, maritime regulations, telecommunications, disarmament, migration, and education cannot be denied. At the same time, the UN's own specialized agencies along with individual member nations keep intact the economic and financial order that holds nations back from committing to the actions necessary to tackle global issues. Public

remarks by the Secretary-General of the UN, Antonio Guterres, like the following belie a deep moral dichotomy within the UN system itself: “Let’s be clear: The present economic system is unfair, boosting inequalities, and now pushing more people into poverty. The morally bankrupt global financial system requires deep structural reform” (United Nations, 2022c, para. 10).

Countries that accept to work within the framework provided by Agenda 2030 expect to experience development-as-social-policy and development-as-growth simultaneously. As a key element of the Sustainable Development Goals (SDG’s), ESD falls within these same guidelines. ESD provides an educational vision for individual and structural sustainability, an outlook that dovetails with broadly-considered state-of-the-art educational thinking, and is also a frequent target of critiques illustrated in the literature review of this study. Simultaneously, ESD provides a vision for development as social policy and as economic growth, an outlook that is firmly rooted in a Western worldview.

Education for Sustainable Development

Among the most influential educational frameworks that have emerged since the turn of the century from the environmental education movement are Place-Based Education and Education for Sustainable Development (ESD). Both emerged and were defined in the 1990’s and 2000’s. Pippa et al. (2021) identify Place-Based Education as a crucial factor in activating key features of ESD. Describing Place-Based Education as an “adjectival education”, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) (2012) characterized ESD as an “overarching paradigm that guides and transforms the core disciplines, second-tier disciplines, and adjectival educations so that they can all contribute to a more sustainable future” (p. 38). ESD encompasses all key components of Place-Based Education, so speaking of ESD entails Place-Based Education. Although the following

description will focus on ESD as an overarching framework, some authors refer to Place-Based Education in a way that is relevant to a discussion about ESD.

A common attribute of educational approaches and curricula on islands around the world is that they increasingly value place as a productive educational construct (Selby & Kagawa, 2018). It may seem self-evident that people live in specific places: all students construct their reality at a specific time and place. A student's cultural milieu along with the people and places where students' lives play out act as a lens through which academic work takes on meaning (Demarest, 2014). Academic programs can facilitate student engagement with the place, people, and culture or they can be more abstract and detached from place. The constructivist tenet that people learn by connecting new ideas to what they already know is widely accepted, and what they know is their place.

Education for Sustainable Development as promoted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) is an educational philosophy that derives its inspiration from the human need to orient social, economic, and political life towards a worldview that sustains the earth and its inhabitants for future generations. After the UN Decade for Education for Sustainable Development from 2005 to 2014, UNESCO held a World Conference on Education for Sustainable Development in Japan in 2014. The following year ESD was named as the educational strategy of the current Sustainable Development Goals. Goal 4 "Quality Education", Target 4.7 states:

By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development. (United Nations, 2022a)

UNESCO situates ESD as a “key enabler of all SDG’s” (UNESCO, 2017) by acknowledging the importance of education in achieving sustainable development, and provides examples of ESD projects all over the world. Since 2015 UNESCO has offered prize money and an opportunity to collaborate with UNESCO by joining the ESD for 2030 Global Network to projects that best exemplify ESD principles. A roadmap for implementing ESD has been published to support global, national, regional, and local initiatives and to assist in mainstreaming ESD throughout the world (UNESCO, 2020). In 2020, the United Nations noted that through the Global Action Programme, 26 million learners were exposed to ESD curricula and special projects, and 2 million educators received training in its provisions (United Nations, 2020).

ESD educators give priority to establishing meaningful and ethical relationships between students and the places where they live. Schools should help students develop a sense of place which means showing responsibility towards one’s environment and community (Demarest, 2014). Among the standards that Cloud and Jackson (2017) identify in their sustainability education benchmarks is “a deep, strong and inspired connection to place” (p. 18). Student interaction with their place should happen in a way that is mutually beneficial.

ESD educators advocate for the Freirean (1970) approach of reading the world to gain a sense of place, as opposed to the more traditional approach to literacy of reading the word. Gruenewald (2003b) asserts that “reading the world is not a retreat from reading the word” because “the two intertwined literacies reinforce each other” (p. 311). Raising student capacity to academically read and interpret their own lived experiences implies dramatic changes to teacher - student relationships, methodology, and curriculum. Reading the world takes place primarily through local investigations in which students engage with a specific place - a pond, a field, a beach, or built places like museums, factories, clinics, organizations - or with specific sustainability issues affecting the locality.

A proper reading of the world can take place to the extent to which teachers and students realize that “places themselves have something to say” (Gruenewald, 2003a, p. 624), and to the extent to which schools act as a conduit to help students gain the capacity to listen to the natural, built, and social environments around them. Listening to a place requires an in-the-field understanding of its history, its evolution, the functioning systems, their intricacies, causes, and consequences. Students learn to interview, research, observe, track changes, identify influences and decisions, and appraise ramifications.

Changing one’s relationship to a place to incorporate sustainability principles takes priority through student reflection on the situations and issues prevalent in that place (Gruenewald, 2003b). Reading the world necessarily promotes justice for marginalized groups, for animals and for the earth itself. ESD seeks to help students to “understand the inextricable link between the health of the biosphere and the health of the ‘ethnosphere’” and to discern “what to preserve and what to change in order for future generations of cultures and communities to thrive over time” (Cloud, 2017, p. 19). ESD aims to strengthen equitable and harmonious relationships between groups of people and their places.

A theory of change employed by ESD rests on Gruenewald’s (2003a) assertion that all places are “products of human decisions” (p. 627), so students should not accept the current status of a place as an inevitable consequence of history. Subject-centered and product-oriented curricula present places as natural results of the forces of nature and history which makes students “complicit in the political processes, however problematic, that stewarded these places into being and that continue to legitimize them” (Gruenewald, 2003a, p. 624). The public role of education is to strengthen democracy and create more equitable societies, but by using what Eisner (1979) calls the “null curriculum” (p. 83) schools contribute to the continuation of unequal power dynamics and obscure “the role of citizens in the potentially democratic process of place making” (Gruenewald, 2003a, p. 629).

Gruenewald (2003a) establishes place making as the “ultimate human vocation,” (p. 636) which could be considered as the guiding principle for ESD. As students gain a holistic understanding of the forces that have shaped a place and the culture of people living there, they also gain the capacity to intervene in certain processes to make the place more equitable and sustainable. Place-making requires a thorough knowledge of history but gives greater importance to the present and future of people and places. The human capacity to shape places deposits great responsibility on humanity as wise stewards who see social justice as the foundation for healthy places (Leicht & Byun, 2018). Gruenewald (2003b) rebukes those who think that the environmental crisis can be handled effectively separately from a strong social justice agenda.

ESD Practices

Leicht and Byun (2018) have shown that ESD pedagogies have a stronger transformative impact than content specific to ESD. Practicing ESD requires teacher competencies such as “action-oriented transformative pedagogy that engages learners in participative, systemic, creative and innovative thinking and acting” in their local context, as well as acting as change agents and identifying local learning opportunities related to sustainability and building cooperative relationships (Leicht & Byun, 2018, p. 56). Among methodological strategies ESD promotes are: cooperative learning, problem solving experiential learning, and critical thinking (Leicht & Byun, 2018). ESD literature suggests carrying out such student activities as action projects, campaigns, case studies, experiments, or workshops in the local community while maintaining a focus on global issues like climate change, biodiversity, sustainable production and consumption, and poverty reduction (Leicht & Byun, 2018).

Future Thinking in ESD

ESD gives importance to empowering students to visualize and create futures - possible, probable, and desirable - for the people and places where they live (Leicht & Byun, 2018). Among the higher order thinking skills that Cloud and Jackson (2017) propose as a benchmark for sustainability education is future thinking. Future thinking is based on the premise that “the best way to predict the future is to design it” (Cloud & Jackson, 2017, p. 10). Designing the future involves carefully reviewing the past to understand present options that determine the future. Students should be prompted to “observe emerging trends and their potential future trajectories and to consider the range of possible future scenarios” which will allow students and schools to forge their desired future (Cloud & Jackson, 2017, p. 10).

ESD Application on Islands

Crossley and Spragu (2014) outline a series of challenges faced by Small Island Developing States (SIDS) when attempting to implement international agenda items like ESD. For example, pressure to address urgent issues such as conserving land and sea resources and the effects of climate change, human resource limitations resulting from meager population numbers, and operating within economies of scale (Crossley & Spragu, 2014). General environmental risks result from their often low-lying geography, fragile ecosystems, and low levels of biodiversity. Thus, Crossley and Spragu (2014) characterize SIDS as “the sharp end” (p. 90) of environmental uncertainty.

Selby and Kagawa (2018) explore environmental education projects on islands to identify trends and best practices. In addition to often being biodiversity hotspots, islands provide fertile grounds for innovations in education because of their isolation, local control over the curriculum, more immediate citizen experience of place, and abundant

opportunities to take action. Selby and Kagawa (2018) delve into ESD which employs a whole school approach to embed ESD principles throughout the curriculum horizontally and vertically. The authors assess the strengths and weaknesses of ESD and are critical of its "Western epistemology and value systems" (Selby & Kagawa, 2018, p. 143).

Referring to ESD-related approaches like biodiversity education, and conservation and science-framed education, Selby and Kagawa (2018) describe formal and non-formal initiatives on Cyprus, Cayman Islands, Falkland Islands, Ascension Island, British Virgin Islands, and Madagascar. Projects on these islands emphasize the intrinsic value of nature, frame biodiversity holistically, emphasize intergenerational learning through direct engagement with local people, raise awareness, and involve extensive fieldwork for conservation purposes. These projects also seek to innovate local and national curricula to be more appropriate for student contexts.

Projects described in the categories of place-based, indigenized, and bioregional environmental education come from the islands of Vanuatu, Marovo, and Palau. Placing these three educational approaches in the same category indicates that Selby and Kagawa (2018) perceive their compatibility. In fact, the authors note that the revival of Indigenous education on many islands has coincided with the emergence of place-based learning (Selby & Kagawa, 2018). Some of the projects seek coherence between Western science-based education and indigenized education. For example, the Vanuatu Ministry of Education published a curriculum statement which "seeks to conflate Indigenous, place-based knowledge and learning with Western knowledge and learning (Selby & Kagawa, 2018, p. 140). However, some school systems steeped in a Western mindset incorporate Indigenous epistemologies superficially (Selby & Kagawa, 2018), and often "reflect the agendas of donor countries related to flavour of the day issues" (Hiebert, 2013, p. 44). Vernacular language use is given importance to name and describe flora, fauna, and topographical

features. Pacific island indigenized educational approaches temper traditional ESD to make it more appropriate for island contexts (Hiebert, 2013).

Selby and Kagawa (2018) and Di Biase et al. (2022) describe projects they classify as climate change and disaster risk education on the islands of the Maldives, Fiji and others connected through the *Sandwatch Project*. Issue-based educational approaches like climate change and disaster risk, go hand in hand as disaster risk is more necessary with the effects of climate change on islands. Referring to a host of ESD-related educational approaches used on islands, Selby and Kagawa (2018) coincide with Di Base et al. (2022) in declaring that “a distinctive pedagogy for environmental education on islands appears to be emerging” (Selby & Kagawa, 2018, p. 144). Elevated levels of student engagement in local inquiry-based projects that support interaction with diverse populations and use Indigenous worldviews are appropriate characteristics for island settings (Hiebert, 2013).

Although seen critically by Selby and Kagawa (2018) as skewed towards a Western worldview, ESD offers valuable epistemological insights that challenge current educational trends. Among them are active community engagement, connecting curriculum to local and global issues, challenging economic models that perpetuate unsustainable policies and practices, examining student roles in oppressive relationships, and place-making for desirable futures (Di Biase et al., 2022). ESD also offers methodological innovations coherent with its defining epistemological principles. ESD has therefore been seen as a natural fit for educational initiatives on islands that aim to build capacity in students to take responsibility for their place (Hiebert, 2013).

Positionality of the Author

The purpose of the following statement is to make my positionality transparent for this study.

My background in approaching the study comes from two sources, my experience as a doctoral student and from working in education in Galapagos from 2017 to 2020.

In 2019, I was asked to collaborate on a project to design, write, implement, and assess a K-12 curriculum contextualized for the Galapagos Islands. At the time I was working as principal of a small, private K-12 school on Santa Cruz Island in the Galapagos. At the same time, I participated in the Education for Sustainability in Galapagos Program from 2017 to 2019 as a teacher trainer in the Social Studies content area. Through these experiences I learned that the teachers in Galapagos face many daunting challenges and I admire those who make constant improvements to their instruction and those who contextualize their instruction.

Once the curriculum innovation project began in 2019, I thought that I would need to deepen my knowledge about Education for Sustainable Development, and I thought I would need academic support to fulfill my own expectations. A PhD program in Education focused on curriculum design was what I needed. I began my graduate studies at the University of Idaho as an online student while living in Ecuador. I visited the Moscow campus once before committing to U of I, but I have not returned since.

The pandemic made my work in Ecuador fall apart completely. I had to move to the United States, ending my job and collaboration with the creation of the new curriculum.

A group of non-governmental organizations and the Ministry of Education finished the curriculum innovation for Galapagos that was published in 2021. I admire the achievement and I want to support its implementation. But the work fails to break free from the market-led, politically fractured, conflict-laden, hegemonic framework for education spearheaded by the United Nations. Galapagos Conservancy is working on the ground to provide support for teachers and administrators to implement the new curriculum under particularly challenging conditions due to the pandemic.

I started my doctoral journey after working for many years in high schools and universities as a teacher, program administrator and principal. I am now 52 years old, and grateful for my experience and high level of clarity and intrinsic motivation to complete my studies. I am aware that much of my motivation may come from the privileges and opportunities afforded to me as a white male.

I have spent more of my life living outside of the United States than in it (in Asia, Africa, and South America), so my perspective is always international. I see educational trends in the United States as an outsider, so I see issues that seem intractable for American educators as solvable. I also follow international educational trends and can see how American educators ignore them to their detriment.

As I mentioned above, my immediate family and my professional life were significantly impacted by the current pandemic. I live by my conviction that we are essentially spiritual beings with a twofold moral purpose: to continually transform ourselves and to transform the world around us towards nobility, cooperation, equity, and unity. Therefore, I am highly motivated to address inequality, exclusion, prejudice, and systemic barriers to opportunity through education.

A Look Ahead

Chapter 2 is a literature review that offers a non-Western perspective on Place-Based Education and on Education for Sustainable Development. Land Education, a framework developed by Indigenous scholars, is explored through a review of its literature. Despite broad acceptance around the world of the basic principles and tenets of ESD, Land educators situate ESD as an expression of settler colonialism, the force behind the displacement and ongoing marginalization of Indigenous people. All of the elements that comprise the philosophical (epistemological, ontological, axiological, and its view of history)

critique Land educators articulate against Place-Based Education and ESD stem from ESD's reification of settler colonialism.

Chapter 3 describes the methods used to carry out this research study. Critical Discourse Analysis provided an appropriate lens through which to qualitatively review both the published texts of the 2021 curriculum innovation for Galapagos and interview transcripts of representatives of conservation and education institutions involved in the elaboration of the new curriculum, from a non-Western perspective. The central research question seeks to identify the implications for education in Galapagos and for other islands of using a partially examined ESD framework for a curriculum innovation in Galapagos. The focus, therefore, is philosophical - on epistemology, ontology, axiology, and how history is viewed - rather than practical to correspond to the nature of the critique Land Education offers of ESD. Directed Content Analysis is employed to deductively review the texts through the lens of predetermined categories and codes gleaned from the Land Education literature.

Chapter 4 presents the findings, first of the analysis of the published texts of the 2021 curriculum innovation, and then of the interview transcripts. Findings are presented in terms of the categories - epistemology, ontology, axiology, and historicity - and their codes. Findings from the analysis of the interview transcripts are also presented in terms of debates among conservation and education leaders in Galapagos regarding the nature and procedure for innovating education in Galapagos. The findings from both types of texts coincide in their conclusions, and vindicate the critiques of ESD in the Land Education literature.

Chapter 5 offers a discussion of the findings. The key findings are summarized, the research questions are answered, and the significance of the results are elaborated. Multiple implications of using a partially examined ESD model to innovate the curriculum in Galapagos are identified for education in Galapagos and for other islands that seek to align

their educational systems with their development goals. The study also rectifies certain misperceptions found in the ESD literature about ESD and Indigenous education, regarding their equivalence and compatibility, the wholesomeness of ESD practices, and how Indigenous people and culture are presented as models to be emulated while offering no modern, concrete examples to justify taking that position.

Chapter 6 offers a conclusion to the research by identifying multiple limitations of the study, the positionality of the author, and possible future directions for further research on education innovation in Galapagos and on other islands. Limitations include not interviewing Indigenous educators in Galapagos, the relatively limited sample size of participants, and not addressing the Ministry of Education of Ecuador's specific school system for Indigenous people: Educación Intercultural Bilingüe (EIB), or Intercultural and Bilingual Education. Future directions include conducting similar research on other islands that are innovating their educational system, exploring experiences of school administrators, teachers, and students in contextualizing the curriculum and implementing the 2021 curriculum innovation. Perhaps the most fertile ground for further research that would complement this study is non-formal education, a prominent and significant aspect of education in Galapagos and on many islands.

Chapter 2: Theoretical Framework

Land Education

Critiques of ESD, as with its predecessors environmental education and Place-Based Education, have emerged from questioning if education should promote specific ends or philosophies, and if education should aim for people to think, behave, or believe in specific ways (Jickling & Spork, 1998). Kopnina and Meijers (2014) affirm that ESD risks indoctrinating students about progress, modernity, and development as articulated by agencies that claim expertise in these topics. At its core, the debate about ESD has hinged on where it falls on the spectrum between anthropocentric and ecocentric worldviews.

A critique of ESD that does not fall on the dichotomous anthropocentric - ecocentric spectrum is Land Education. Land Education is a framework developed by Indigenous scholars that views land as the true source of knowledge and requires educators to take a historical perspective which will allow for Indigenous futurities. The critical difference between ESD and similar place-based educational conceptions and Land Education is the concept of land, which implies understanding the past, present, and future of the relationship between people and the land. In general, “Land education requires many things including critical border thinking, ... solidarity with consciousness of land and settler colonialism, constant resistance to land perpetually becoming a resource for global markets and negating presumptions about the absence of sovereign Indigenous futures” (Bang et al., 2014, p. 43). Resistance to oppressive forces and attention to healing and building new relationships happen simultaneously through Land Education.

Bang et al. (2014) criticize contemporary pedagogy – including Place-Based Education - as object focused because place is considered an external element of human experience, while Land Education centers on the nurturing of equitable “subject – subject

relations” (p. 44). Failure to focus on subject – subject relations depicts places as human produced objects that express a “settler colonial relationship to knowledge and power” (p. 44).

Settler Colonialism

In large part, Land Education arises as a response to Place-Based Education and similarly formulated approaches to environmental education that proclaim cultural and political neutrality while perpetuating hegemonic perspectives of settler – Indigenous relationships. Settler colonialism is associated with the displacement and ongoing marginalization of Indigenous peoples in North America by European settlers. The central tenet of settler colonialism is turning land into property and limiting ownership to a chosen few settlers. Separating Indigenous people from their land is an attempt to erase Indigenous identity altogether, and to eventually assimilate Indigenous people into settler society.

Settler colonialist society is conceived as a stratified system that is especially insidious because it leads people to believe they live in a fair and modern society. However, the institutions, policies, and systems that define settler colonialist society are the result of decisions made over centuries that purposefully marginalize and disenfranchise the original inhabitants. The many parts of the settler colonialist order are broken down into segments and are presented separately to make it nearly impossible to challenge assumptions that underlie the overall system (Patel, 2016). Settler colonialism is hegemonic as citizens come to believe that the way things are is normal and have always been that way.

Value systems that bolster settler colonialism rest on individualism, ranking, and status. Racialization, for example, aims to pigeon-hole people in order to rank them and give status to insiders or remove status from outsiders. Another example is settler colonialist reliance on giving status to places as either useless, and therefore apt for Indigenous

occupation, or having potential and needing management by settlers to become livable or useful for cultivation, industrialization, or conservation (Bang et al., 2014).

Settler colonial educational systems validate and “reseat colonial sets of relationships” (Patel, 2016, p. 15). Settler colonialism is perpetuated by normalizing stratification and violent marginalization in schools. Settler colonial knowledge systems and pedagogies invalidate and seek to erase all other knowledge systems, including Indigenous ones.

In settler colonialist societies, epistemology, knowledge and learning are defined within a framework of ownership, objectivity, separation, and exploitation. Knowledge is a commodity to be negotiated, bought and sold and is protected by the legal system. Settler colonialism values universal truths that disregard the need for specific people, places or land. In fact, as Patel (2016) states, formal schooling in the United States from its beginnings “... has had far more to do with the project of coloniality than it has with learning, teaching, or co-existence” (p 4).

Several widespread practices define settler colonial education. For example, education in settler colonial schools is forced upon students through obligatory attendance and punitive assessment systems. Ranking students using grade point averages associates status with academic success defined in terms of a set of principles that assumes assimilation. A third example is conflation of learning with test scores, as is the current trend, on culturally biased standardized tests (Patel, 2016). This practice compounds social and economic stratification thus cementing the achievement gap in place. Extolling test scores so highly also validates abstract learning that is personless and landless.

The following key elements of Land Education are framed within a response to settler colonialism in general and ESD in particular.

Our Relationship to Land

Land education proponents applaud the efforts of place-based educators that take a critical perspective to build relationships to place and encounter meaning in “carnal sensory empathy with the living land...” (Bang et al., 2014, p. 42) through purposeful contact and experiences. Bang et al. (2014) indicate that Place-Based Education can explore “the historical memory of a place” (p. 42) to gain awareness of Indigenous traditions that celebrate place.

However, Simpson (2014) asserts that Place-Based Education defines place too narrowly. First, for place to be meaningful, it needs to include “... all aspects of creation: landforms, elements, plants, animals, spirits, sounds, thoughts, feelings, energies and all of the emergent systems, ecologies and networks that connect these elements” (p. 15). Second, the conventional concept of place is anthropocentric as it is centered on human experience. Anthropocentrism becomes an issue to the extent that land is considered an inert and meaningless backdrop to the human drama, separating humanity from the land (Bang et al., 2014). Bang et al. (2014) further state that anthropocentrism is destructive to Indigenous cosmologies. The authors acknowledge that although some Place-Based Education literature recognizes this weakness and works towards its resolution, such efforts will always fall short because of the superficial treatment given to how settler colonialism imbues Western scientific thought built upon the separation between nature and culture. Bang et al. (2014) equate this thinking to “the deforestation of the mind” (p. 44).

Perhaps the most distinctive feature of Land Education is its view of the concept of land. All things are animate (Deloria, 1997), a fact that most clearly distinguishes Indigenous and Western worldviews, including Western science models (Madjidi & Restoule, 2008). In other words, both matter and humans live and are in a living relationship with one another. As an example, place-based pedagogies see birds as being an important part of the cycle of

life that keeps the earth in balance, while land educators see birds as human relatives. Settler colonialism sees land as property, while an Indigenous worldview sees the need to “uphold land as our relative, not as a material object to protect for perpetual use or conservation” (Bang et al., 2014, p. 46). From an Indigenous perspective:

Land is spiritual, emotional, and relational; Land is experiential, (re)membered, and storied; Land is consciousness—Land is sentient (see also Styres, 2017, p. 93).

Land refers to the ways we honor and respect her as a sentient and conscious being (Styres, 2018, p. 27).

As sentient beings, humans and land form a bond so that “land is not generalizable the way space and place are generalizable. Land is both people and place, that is, Native people constitute and are constituted by land” (Paperson, 2014, p. 124). Land is quintessentially material in nature, and deeply spiritual. It is flesh and the source of knowledge. Land is corporeal and ethereal. It is alive, conscious. Land, “... aki, is both context and process” (Simpson, 2014, p. 7). Our relationship to Land is “content and pedagogy” (Simpson, 2014, p.14).

From an educational perspective, it is most significant that “a relationship with the land serves as the foundation for all knowledge” (Muñoz, 2018, p. 67). Knowledge, therefore, has a “sacred purpose” (Battiste, 2002, p. 14). Education literally “comes from the roots up ... it comes from being enveloped by land” (Simpson, 2014, p. 9). A relationship with land can be the foundation for all knowledge because of the historical bond that makes the self and the world a single entity. Built over centuries of continuous residence, the bond between people and land is infused with a spirituality founded upon harmonious coexistence. This is not a matter of taking Place-Based Education to its logical conclusion, or to an extreme. Rather, it is a complete paradigm shift that upends education as we know it.

The History of Land and Indigenous Futurities

In her book about place-based curriculum design, Demarest (2014) acknowledges that “places hold stories” (p. 8) and she invites students to make personal meaning through exploration and interpretation. She encourages teachers to use a variety of perspectives to learn these stories. Teachers should include “hidden stories of violence, genocide, or cultural oppression in a place that have been silenced over time” (Demarest, 2014, p. 8). Further, a sense of place should include awareness of power struggles and resistance (Demarest, 2014).

Demarest's (2014) brief mention of the importance that Place-Based Education and ESD give to history, and specifically to the history of violence and oppression in a particular place, is typical of the ESD literature. ESD prioritizes the present and future status of a place over its history.

For Land Education proponents, belittling the past is a grave error. As Calderón (2014) affirms,

One of the major limitations of critical place-based education as it is generally theorized is that it does not go far enough to connect how place in the US has been inexorably linked to the genocide of Indigenous peoples and continued settler colonialism. While settler colonial violence and oppression is not an explicit aspect of place-based education, it nonetheless fails to meaningfully engage colonial legacies in education and particularly how conceptions of place have been involved in their continuance. (p. 25)

Further to this point, the present can only be understood in light of the past, so if, through education, the past has been lied about, hidden, denied, or erased, then the present is insubstantial. Misperceptions about the past justify and perpetuate racialization and discrimination because history is used to blame Indigenous peoples for disparities in society

- for the achievement gap (Patel, 2016). The truth about the past will endorse a shift away from a colonial educational system that imposes assimilation (The Organization for Economic Co-operation and Development, 2018).

If land is the source of all knowledge, then land is the first teacher. Among the implications of this statement is the importance of the history of the land itself. Land as knowledge also implies that the “disruption of Indigenous relationships to land represents a profound epistemic, ontological, cosmological violence” (Tuck & Yang, 2012, p. 5). Even more graphically, Solis (2017) describes removal of Indigenous people from their land as “dismemberment” (p. 200) because their bodies can no longer tell their stories or carry out traditional Native educational practices.

Failing to meaningfully engage with the history of Indigenous people and their land is itself an act of violence that perpetuates and validates settler colonialism. Bang et al. (2014) affirm that place-based pedagogies hinge on the colonial interpretations of land as vast, uninhabited spaces ripe for discovery, settler cultivation or conservation. There is even danger in teaching truthful history if present settler stability is presumed (Bang et al, 2014). Bang et al. (2014) call it a “challenge” for place-based educators to conduct their lessons in a way that does not “elevate settlers’ rationales for their right to land,” (p. 42) although this may prove almost insurmountable with the current importance given to standardized testing.

Being separated from the single source of knowledge would be devastating to any people at any time in history and it is a violence that affects all Indigenous people even after many generations. As we are all learning with greater force and clarity, separation from the land is also devastating to the land, giving rise to the very place-based education and environmental education movements that perpetuate the original violence.

Place-based and ESD educators aim for students to live in a reflexive relationship to their places. Land Education proponents acknowledge that this is possible for anyone. But they also question the validity of doing so without ever understanding or acknowledging the

philosophical nature of Land and the deeply intimate sacredness of the relationships Indigenous peoples have with Land (Styres, 2018). Acknowledging the original inhabitants of all land is a first step towards living in a reflexive relationship to place. Acknowledging that all land is Indigenous land requires educators to understand the local land through stories, as Indigenous history is told through stories. Educators need to seek out the stories that express the knowledge and wisdom “embedded” (Styres, 2018, p. 28) in land to open intimate relationships with the land. Styres (2018) eloquently emphasizes this point by bringing together the land as sentient being with the history of the Indigenous people who originally storied the land:

Land as a decolonizing praxis informs pedagogy through storied relationships. These stories are etched into the essence of every rock, tree, animal, pathway, and waterway (whether in urban or rural/natural or built environments) in relation to the Indigenous people who have existed on the land since time immemorial. Therefore, storied Landscapes refers to Indigenous stories and narratives of place—literacies of Land. (p. 28)

Land Education aims to help people re-inhabit the land in a historically meaningful way. Re-inhabitation must be led by Indigenous people because it "demands the absence / removal of settlers / settlerism from place, in order to afford Indigenous peoples the opportunity to maintain and heal spiritual relationships with the land" (Calderón, 2014, p.27). Healing implies using stories to work back through time towards a decolonized understanding of land and then “to think about what non-colonial relations might look like both in theory and in practice” (Calderón, 2014, p. 28). Teaching history adequately allows students to coherently connect the past, present and future of people and place.

In addition to giving importance to the history of land, Land educators speak about futurities, which are “ways that groups imagine and produce knowledge about futures”

(Goodyear-Ka'ōpua, 2018, p. 86). Futurities are conditioned on past events and approaches taken to their present implications. If Pace-Based Education does not go beyond acknowledging colonial pasts to meaningfully engage with the history of Indigenous people that acknowledges the violence and genocide perpetuated against them, then Indigenous futures are also colonized. Settler futures require the eradication of Indigenous peoples, while Indigenous futurities exclude settler inhabitation of Indigenous land and settler epistemologies (Goodyear-Ka'ōpua, 2018). Where settler colonialism and settler epistemologies prevail, Indigenous survivors are then “forced to forgive and forget, they are forced-fed with convenient versions of the past and an equally comfortable way into the future” (Solis, 2017, p. 201).

“Force feeding” is an Indigenous description for school, and ESD and place-based methodologies do not challenge this narrative. Settler colonialism and settler epistemologies define many school systems throughout the US and the world. In addition to properly studying Indigenous histories. In contrast, Land Education aims to equip students with the tools to “critically analyze representations of futures” to engage in future-making (Goodyear-Ka'ōpua, 2018, p. 90).

Settler histories entail settler futures; Indigenous histories open possibilities for Indigenous futurities. The problem does not lie in the belief in empowering students to have influence in the future of their communities as ESD advocates, rather it lies in the epistemological foundation of the history that is taught and the decolonized futures open to those students and their communities.

Although originating from the global North, Land Education practitioners reject Western epistemology, ontology, axiology, and models of development. Pernicious settler colonialism cannot coexist alongside practices associated with Land Education. Land Education revolves around the concept of Land, the spiritual – material source of all

knowledge. Centering Land implies a relational outlook among all elements of our existence, which is both the object and subject of education.

Chapter 3: Methods

Driven by a desire to prepare citizens who deeply understand and appreciate the unique characteristics of their home islands, leaders of local conservation and educational institutions joined together with the Ministry of Education of Ecuador to contextualize the 2016 national curriculum for schools in the Galapagos Islands. Published in 2021, the contextualized curriculum innovation is predicated on the principles of Education for Sustainable Development (ESD), an educational philosophy that emerged from environmental education and is championed by the United Nations through the Sustainable Development Goals. The innovation process and the published products reveal signs that curriculum architects imprinted an empirical, even speculative understanding of ESD onto the curriculum innovation.

The central research question for this study is: **What are the epistemological, ontological, axiological, and historicity-related implications of using a partially examined Education for Sustainable Development framework for curriculum innovation in the Galapagos Islands?** Although practical implications of a partially examined ESD framework also figure prominently in this research, the philosophical implications are prioritized as they are a primary consideration, and are determinant. Subordinate research questions maintain a philosophical emphasis: a) In what ways do the philosophies of conservation organizations, education administrators and educators, with respect to this curriculum, reflect similar or divergent philosophies? b) How and in what ways does the curriculum reflect Western-centered concepts of sustainable development?

There are several rich sources of information about the 2021 contextualized curriculum innovation for the Galapagos Islands. I chose to focus on the official texts published by the Ecuadorian Ministry of Education for the curriculum innovation, and on representatives of conservation and educational institutions that were involved in developing

the curriculum innovation. Because this study is focused on the philosophical underpinnings of the design and development of the curriculum, I chose to not work with school administrators, teachers, and students who implement the curriculum innovation. For both the published, official texts of the curriculum innovation and the transcripts of the interviews of the representatives of conservation and educational institutions, I reviewed the data through the lens of Critical Discourse Analysis (CDA), and I coded and analyzed the data using the CDA theoretical lens as well as Directed Content Analysis.

Critical Discourse Analysis

Unlike other types of language analysis that focus on the rules of language and on smaller units of language, Critical Discourse Analysis (CDA) focuses on the social aspects of communication by analyzing larger units of language such as conversations, texts and sets of texts. CDA allows researchers to identify how language is used to represent or interpret reality, revealing worldviews (Van Dijk, 2008) implicit in a text. Researchers use CDA to indicate how values, beliefs, and assumptions are communicated and how language use relates to its social, political and historical context. CDA has a decidedly critical posture, and so is especially potent when researchers seek to reveal power structures and the use of language to marginalize and privilege groups. CDA also allows researchers to challenge discourses used in texts.

CDA is a technique to systematically analyze different types of texts through a coding process that complies to specific rules. CDA allows researchers to identify specific characteristics of a message (Titscher et al., 2000). Often phrases are analyzed for ideological associations. CDA has emerged as a compelling tool to analyze curricula and its power to construct and regulate social relations. Curricula have been shown to orient students towards specific social practices, and textbooks normalize selected “cultural logics”

for preschool students while purporting to transmit neutral skills (Luke, 1995, p. 33).

Curricula and textbooks can be analyzed as historical discourse, which requires knowledge of the historical context through which they emerge (Harb, 2017).

Details about the implementation of CDA in this research are provided below in the subsection Methods of Gathering Data.

Directed Content Analysis

I used directed content analysis, one type of qualitative content analysis (Hsieh & Shannon, 2005), to examine the texts of the contextualized curriculum innovation for Galapagos published in 2021 and the interview transcripts. To carry out directed content analysis, researchers use a theoretical framework (in this case Land Education) to select and apply key concepts or variables generated from the framework and research questions to the selected text (Elo & Kyngäs, 2008; Titscher & Jenner, 2000). Deductive coding begins using the predetermined categories (in this case epistemology, ontology, axiology, and historicity) and codes (in this case key critiques of ESD in the Land Education literature). New or sub categories can be created for useful text that cannot be coded deductively. A directed approach to content analysis aims to validate a theory when findings offer supporting and non-supporting evidence for that theory (Potter & Levine-Donnerstein, 1999), which in this case is the critique that Land Education brings to bear on ESD.

Determination of Categories and Codes

In light of the questions guiding this study, I identified the most common and representative critiques of ESD from the Land Education literature which became the codes. I then organized them into categories representative of the Land Education literature: epistemology, ontology, axiology, and historicity.

The critiques of ESD found in the Land Education literature emerge from questions related to the essence of human identity, being, nature, knowledge, values, truth around history, and relationships. These are the central questions to an Indigenous worldview that are addressed from a settler colonial perspective in ESD. The epistemology, ontology, and axiology categories refer to how ESD promotes Western-centered belief systems about knowledge, being, and values. Historicity responds to the specific critique of ESD that it both “fails to meaningfully engage colonial legacies in education and particularly how conceptions of place have been involved in their continuance” (Calderón, 2014, p. 25) and focuses student attention on the present and future uncoupled from the past.

Once the critiques (codes) were identified and articulated, they needed consolidation to minimize overlap and editing for clarity and succinctness. Finally, using the identified codes for analysis of the curriculum and interview transcripts revealed that several of the critiques were not used and so were eliminated from the instrument.

Definition of Key Terms (Categories) for the Units of

Analysis

Epistemology

Epistemology is a theory of knowledge that explores the nature, origin, and scope of knowledge and belief. Essential questions in the philosophical branch of epistemology that are relevant to this study include: What is knowledge? What is learning? Is learning only cognitive? How do humanity, knowledge, and learning interact?

Ontology

The philosophical branch of ontology studies questions of being or existence, the essence of things and what is true. Questions relevant to this study include: What is life? What is or is not alive? What is human nature? What is the nature of land? What is the relationship between humanity and the rest of creation?

Axiology

Axiology is the study of goodness, or value and seeks to understand the nature of values and the processes that lead to value judgements. Questions relevant to this study regard the value of three worldviews: settler colonial, materialist, and Indigenous; and the value of current power structures. A further axiological question seeks to identify the values that uphold Education for Sustainable Development and the Western development model.

Historicity

The concept of historicity is taken from the pedagogical model of Learning in Places (Learning in Places Collaborative, 2021), a collaborative network of educators. Cultural perceptions of the past accumulated through school experiences and other cultural references are referred to as historicity. Far from being a neutral concept, historicity is built on individual and cultural positionality that shapes the meaning derived from experience. Relations among individuals, communities, and institutions are structured by power dynamics, shaped by conscious decisions over time, that also shape meaning derived from experience (Learning in Places Collaborative, 2021).

It is common for formal school curricula to decouple the past from the present. History is often taught as a discipline in the social sciences, siloed from other disciplines. Teaching history as a fact-laden list of conflict, discovery, and technology events emerges

from a view of history as distant and inconsequential to the present and the future and from an epistemological posture that views learning and knowledge as nouns that can be acquired, stored and measured.

Questions explored in this study relevant to historicity include how expressions of discrimination, exploitation, and oppression affect our understanding of history, how revisionist history can determine conceptions of place and impose assimilation, how the present and future are conceived in the context of history, and how methodologies of teaching history can validate and invalidate worldviews.

Units of analysis

I conducted a coding exercise of the published documents that comprised the 2021 contextualized curriculum innovation for Galapagos. I undertook separate coding exercises for each document, the introduction, the curriculum standards, and the methodological guide.

The introduction comes from the orientation section of the document:

Contextualización Curricular con Enfoque de Sostenibilidad para las Islas Galápagos: Educación General Básica y Bachillerato General Unificado (Contextualized Curriculum Focused on Sustainability for Primary and Secondary Schools of the Galapagos Islands).

The curriculum standards come from the body of the same document. The methodological guide comes from the document: Guía Metodológica de la Contextualización Curricular con Enfoque de Sostenibilidad para las Islas Galápagos Educación General Básica y Bachillerato General Unificado (Methodological Guide for the Contextualized Curriculum Focused on Sustainability for Primary and Secondary Schools of the Galapagos Islands).

I then carried out the same coding exercise with the same method and codes for the interview transcripts.

The following codes were gleaned from the Land Education literature. I have listed the codes within their respective category:

Epistemology

To conduct Directed Content Analysis of epistemological expressions in the selected texts and transcripts, I used the following codes. What follows is the code and its definition except in cases where a definition is unnecessary.

1. In ESD, learning is transactional;
2. In ESD, learning and knowledge are nouns - In ESD, learning and knowledge are nouns and can be acquired, stored and measured;
3. ESD validates abstract learning - ESD validates abstract learning that is personless and landless;
4. In ESD learning is cognitive in nature - In ESD learning is cognitive in nature and aims to develop the capacity of the brain.

Ontology

To conduct Directed Content Analysis of ontological expressions in the selected texts and transcripts, I used the following codes. What follows is the code and its definition except in cases where a definition is unnecessary.

1. ESD gives credence to place over land;
2. In ESD, place is considered an inert backdrop to the human drama - In ESD, place is considered an inert and meaningless “backdrop” to the human drama, separating humanity from place (Bang et al., 2014);

3. ESD hinges on colonial interpretations of land - ESD hinges on colonial interpretations of land as vast, uninhabited spaces ripe for discovery, settler cultivation or conservation;
4. ESD is anthropocentric - ESD is anthropocentric (centered on human experience);
5. ESD objectifies elements outside of humanity - ESD perceives elements outside of humanity as objects and commodities;
6. In ESD, relationships with non-human elements are characterized by otherness - In ESD, relationships with non-human elements are characterized by distinction, distance, detachment and otherness.

Axiology

To carry out Directed Content Analysis of axiological expressions in the selected texts and transcripts, I used the following codes:

1. In ESD, present settler stability is presumed;
2. ESD empowers students to move within current power structures;
3. ESD validates a materialist worldview.

Historicity

To carry out Directed Content Analysis of expressions of historicity in the selected texts and transcripts, I used the following codes. Codes are presented with their definitions except in cases where a definition is unnecessary:

1. ESD engages in historical whitewashing - ESD engages in Historical Whitewashing—(Sleeter, 2005), minimizing unpleasant facts and events in history by

- ignoring prejudice, racism, discrimination, exploitation, oppression, sexism, and inter-group conflict (Sadker, n.d.).
2. ESD fails to meaningfully engage colonial legacies in education - ESD fails to meaningfully engage colonial legacies in education and particularly how conceptions of place have been involved in their continuance (Calderón, 2014, p. 25).
 3. ESD imposes assimilation by erasing the past - ESD imposes assimilation by lying about, hiding, denying or erasing the past.
 4. In ESD, Indigenous survivors are forced to forget the past to accept settler futures - In ESD, Indigenous survivors are then “forced to forgive and forget, they are forced-fed with convenient versions of the past and an equally comfortable way into the future” (Solis, 2017, p. 201).
 5. ESD places much more importance on the present and future status of a place than its history.
 6. In ESD, history is taught through fact-based methodologies - In ESD, history is taught through chronological and fact-based methodologies without acknowledgment of stories that express the knowledge and wisdom “embedded” in land (Styres, 2018, p. 28).

Text Selection

The following texts are the published materials of the 2021 contextualized curriculum innovation for Galapagos. The 2021 curriculum contains all the standards of the 2016 Ecuadorian National Curriculum.

- Contextualización Curricular con Enfoque de Sostenibilidad para las Islas Galápagos: Educación General Básica y Bachillerato General Unificado (Contextualized Curriculum Focused on Sustainability for Primary and Secondary

Schools of the Galapagos Islands). This text is the 2021 contextualized curriculum innovation for Galapagos. It contains an 18-page orientation to the contextualized curriculum innovation and 290 pages of the curriculum standards or skills for K-12 education.

- Guía Metodológica de la Contextualización Curricular con Enfoque de Sostenibilidad para las Islas Galápagos Educación General Básica y Bachillerato General Unificado (Methodological Guide for the Contextualized Curriculum Focused on Sustainability for Primary and Secondary Schools of the Galapagos Islands). This document provides methodological orientations for teachers to implement the contextualized curriculum innovation successfully. 84 pages.
- In addition to the published texts related to the 2021 curriculum innovation for Galapagos, the Interview transcripts were also analyzed.

Research Subjects and their Selection

Of the many international and local organizations that work on the Galapagos Islands, few work only in Galapagos, administer educational programs there, and have participated in the design and implementation of curriculum and professional development of Galapagos teachers since 2016. Research subjects were selected from the educational teams of these organizations because of their direct relationship with the curricula and professional development efforts in Galapagos. Research subjects were also selected from the Ministry of Education of Ecuador as the key regulatory entity for education on Galapagos and for its role in designing, implementing, and approving curricula and professional development in Galapagos. Further research subjects were selected who contributed to the curriculum development process but may no longer work with conservation and educational organizations.

Organizations from which Research Subjects were Selected

Galapagos Conservancy – Galapagos Conservancy has led professional development efforts for Galapagos teachers since 2016, and for teacher leaders since 2017 through the Education for Sustainability in Galapagos Program (ESGP). Galapagos Conservancy is responsible for proposing, designing and implementing all facets of the ESGP.

Scalesia Foundation – Scalesia Foundation dedicates its efforts exclusively to education on Galapagos, is Galapagos Conservancy's local partner and as such has collaborated with all professional development efforts through the ESGP.

The Ministry of Education of Ecuador – The Ministry of Education is a national entity that is represented in Galapagos through a district office. The Ministry of Education designed the 2016 national curriculum and the 2021 contextualized curriculum innovation for Galapagos in collaboration with local entities. The Ministry of Education also guides and supports Galapagos Conservancy on the ESGP.

The Charles Darwin Foundation (CDF) - The CDF is the largest, strongest, and oldest non-governmental organization on Galapagos. It is dedicated to scientific research and it also carries out significant non-formal educational activities. The CDF collaborated with the design of the 2021 contextualized curriculum innovation for Galapagos and is interested in taking on more responsibility for educating Galapagos children and youth.

Galapagos National Park (GNP) – The GNP is the principal provincial authority for environmental management, park administration, scientific research and environmental education. The GNP collaborated with the design of the 2021 contextualized curriculum innovation for Galapagos and carries out a variety of non-formal educational activities for children and youth.

Sampling and Recruitment

Purposeful sampling was employed to select representatives from each selected organization for semi-structured, in-depth interviews using an interview protocol (Appendix A). I wrote emails to the heads of the education departments in the selected organizations outlining who I was, the nature of the research I aimed to carry out, and requesting an interview with him or her or somebody they delegated to me for this purpose. In one case I interviewed both the department head and a delegate at the request of the department head. In another case I interviewed a delegate instead of the department head at the request of the department head because the delegate was more involved in the curriculum development and implementation than the department head. The representative of the Ministry of Education was chosen because they were the district Director during the time the new curriculum was developed and launched. Finally, I contacted one of the authors of the 2021 contextualized curriculum innovation to gain insight into the development process from the perspective of the developers.

After the initial contact, I exchanged emails with the designated interviewee(s) in each organization to agree upon a convenient date and time for the interview. The email also included the informed consent form and its method of signature. All interviewees signed the informed consent form voluntarily.

Galapagos Conservancy's operation in education consists of three to four administrators. The Scalesia Foundation has approximately three or four members active in the ESGP. The CDF and the National Park each have a team of approximately four administrators and educators involved in education. The district office of the Ministry of Education has approximately three or four administrators involved in the ESGP, curriculum development, and supervision.

I have met many of these administrators personally as I facilitated several professional development seminars for Galapagos Conservancy and worked as a school administrator from 2017 to 2020. However, I am currently not in contact with them, and therefore I do not perceive ethical issues related to the relationship between the researcher and participants.

The Data

The data gathered through this research is qualitative in nature to gain in-depth insights into the analyzed texts and into interviewees' perspectives and experiences. The interview protocol (Appendix A) was used for all interviewees.

Process of Arriving at the Interview Questions

In 2020, conservation organizations that work in education on Galapagos were invited to contribute to the community-led process facilitated by the Ministry of Education to contextualize for Galapagos the 2016 Ecuadorian National Curriculum. Representatives of conservation organizations participated in roundtable discussions to make their contributions. Before conducting the interviews, it was not clear to me how much background these representatives had or were given about ESD as the key philosophical framework for the contextualized curriculum innovation, or if the fact that ESD can be viewed as representative of a Western worldview was discussed. It is clear that participants in the roundtable discussions about the new curriculum expressed views about education and development held by the organizations they represented. It is also clear that the final product, the 2021 contextualized curriculum innovation, may or may not reflect the vision these organizations initially had for the new curriculum. In either case, it is valuable to know the vision for education and development for Galapagos held by these organizations. If their

vision aligns with the sustainable development discourse led by the United Nations, then there may be elements of their vision that could be characterized as representative of a Western worldview.

The semi-structured interview protocol (Appendix A) used for the interviews aimed to bring interviewees to describe their vision for education and to what extent it aligns with the provisions of the 2021 contextualized curriculum innovation. I elaborated the questions in order to provide clarity around the vision for education of these organizations and their perspectives on the contextualized curriculum innovation for Galapagos, and to answer the research questions.

Methods of Gathering Data

I conducted in-depth, semi structured interviews using an interview protocol (Appendix A). I interviewed each representative individually to bring out individual voices and unique experiences. I arranged with each interviewee a specific day and time to conduct an interview over video conference. Protocols for the interviews included scheduling guidelines for interviewee convenience, memoing about the interview, listening carefully to the interviewee's story, allowing for pauses and think time, giving the interviewee permission to pass on any question for any reason, and that the responses would be kept confidential. All interviewees signed a University of Idaho Institutional Review Board approved consent form.

I adhered to the instrument protocol (Appendix A), but I also went off script to follow promising leads in the spirit of a semi-structured interview approach. The instrument covered the contextual factors described above. See Appendix A for the complete protocol. I recorded the interview audio using the record function on Zoom. I took additional notes during the interviews and upon completion, to highlight key details that emerged. I obtained

the transcripts by typing out each interview because they were conducted in Spanish. I then cleaned up the data using intelligent verbatim transcription (McMullin, 2021). This style of transcription involves creating a clean, print-ready transcript that has been edited in detail to correct grammatical errors, improve sentence structure (paraphrasing), and remove distractions like fillers (um, uh, you know, etc.), false starts (incomplete sentences), and repetitions (repeated words and sentences). Further rules for cleaning the data include using short descriptions to identify sound events that interrupt dialog, to show uncertainty, for filler words, conjunctions, and false sentence starts. Formatting rules aim to facilitate reading and to standardize the transcript format.

All transcripts of the interviews conducted in Spanish were then translated into English. Finally, details that point to interviewee identities were scrubbed from the transcripts.

The codes used in this research project were gleaned from critiques of Place-based Education, and therefore Education for Sustainable Development (ESD), in the Land Education literature. Identified using Critical Discourse Analysis (CDA), the codes represent a critical perspective of ESD. The selected codes also represent key concepts from the Land Education framework. Looking through the lens offered by the codes using Directed Content Analysis, I carried out a deductive, detailed review of the selected texts, both the published texts that contain the 2021 contextualized curriculum for Galapagos and the interview transcripts. Upon finding passages that represented supporting or non-supporting evidence of the code, I copied and pasted them into rows in a spreadsheet that provided details about each quoted text: category (epistemology, ontology, axiology, or historicity), the code that it conveyed, the quoted passage, its document and page of origin, and any commentary about the text that needed to be captured in the moment. I also identified non-supporting passages using blue font. I placed each of the four analyzed texts, the introduction, the standards or skills, the methodological guide and the interview transcripts,

in a separate tab of the spreadsheet to gain an overarching perspective on each section. I read through each text several times, and made corrections to the coding spreadsheet with each iteration, to overcome initial reactions and gain clarity about the expression of each code in the texts and their potential meanings.

Data Analysis

To elaborate the findings / results, I first copied all of the quoted passages taken from the published curriculum materials from the spreadsheet into a word processing document classified into categories (epistemology, ontology, axiology, or historicity), and the commentaries related to each quoted passage. Quoted passages and their commentaries were then ordered by codes and interpreted. Quoted passages were preserved unless paraphrasing seemed clearer and more appropriate. The same process was then repeated for the key passages derived from the interview transcripts with one modification. To present direct quotes from the interviewees and preserve their anonymity, a pseudonym was assigned to each one that is used in the presentation of the findings. I took a further step to protect the identity of the interviewees, as Santa Cruz island is a small community and people can be easily identified unless precautions are taken. There were a half a dozen direct quotes from interviewees that would have enhanced the text, but because they could have been seen as revealing the interviewee's identity, I chose to paraphrase the concept instead.

Abundant examples of nearly every code were found in the published texts of the 2021 curriculum innovation, and are portrayed in a linear format. However, examples of the concepts expressed in the codes were less abundant, less linear, and more nuanced in the interview transcripts. The results from the interviews fit better into a narrative format that portrayed debates among education and conservation leaders in Galapagos. Debates such

as how to best innovate education in Galapagos explore the critiques of ESD in the Land Education literature (the codes) within the philosophical categories (epistemology, ontology, axiology, and historicity) also established in the Land Education literature as foundational to education. Data analysis of the interview transcripts is therefore presented using a narrative, non-linear format.

Because the findings from the critical discourse analysis of the texts comprising the 2021 contextualized curriculum innovation, and the findings from the interviews of conservation and educational leaders in Galapagos were so distinct in character, the findings for each will be presented separately.

Chapter 4: Findings / Results

Critical Discourse Analysis of the 2021 Contextualized Curriculum Innovation

Epistemology

The overarching epistemological critique Land educators make of ESD and related educational approaches is that it is “object-focused” (Bang et al., 2014, p. 44). Perhaps the most intimate concept in ESD is place, a “human-shaped object” (Bang et al., 2014, p. 44). ESD considers place as an entity external to humanity that needs to be studied, molded, and capitalized on. Knowledge of place, or anything else in ESD, is purpose-driven and its accumulation gives relative advantage to some students over others. The following codes, derived from the Land Education literature, represent a critique that Land Education makes of the object-focused ESD learning model:

1. In ESD, learning is transactional;
2. In ESD, learning and knowledge are nouns;
3. ESD validates abstract learning; and
4. In ESD, learning is cognitive in nature

2021 curriculum innovation standards are cited with an in-text citation when they are quoted or referenced in the curriculum and not stated as standards, and are cited with the standard code from the curriculum when standards are otherwise referenced. A typical standard code will have the following presentation: (CN.4.5.4). Standard codes are also used to reference quoted texts where no page number is available. All curriculum standards and their codes come from the published curriculum document: Contextualización Curricular

con Enfoque de Sostenibilidad para las Islas Galápagos: Educación General Básica y Bachillerato General Unificado.

Subtitles indicate categories and codes for which evidence from the curriculum is then provided.

Epistemology, code 1: In ESD, learning is transactional

A critical discourse analysis of the documents that comprise the 2021 contextualized curriculum innovation for Galapagos revealed many expressions of an “object-focused” learning model. The Methodological Guide for teachers states that knowledge is not a possession of the teacher that must be transmitted to the students, but the result of a “work process” (Ministerio de Educación del Ecuador, 2021b, p. 14) between students and teachers. Trumped in the introductory text of the curriculum itself, however, if knowledge is not a possession of the teacher, then it is in possession of the curriculum as the “national curriculum contains the basic knowledge required for students of the National Education System” (Ministerio de Educación del Ecuador, 2021a, p. 8). How teachers are expected to employ a “work process” with students to come up with predetermined knowledge contained in the curriculum is unclear. Knowledge transmission from the textbook to students becomes the clearest, simplest option for teachers, which is not a result of a work process between students and teachers. Evidence of this transactional posture follows in the description of essential, obligatory knowledge that must be acquired at the end of each sublevel (set of three grades). Identification of such knowledge in the curriculum aims to “avoid a situation of high risk of social exclusion for the students involved, since its non-acquisition would seriously compromise their personal and professional life project, it would very negatively condition their personal and social development” (Ministerio de Educación del Ecuador, 2021a, p. 16).

Epistemology, code 2: In ESD, learning and knowledge are nouns

A further concern arises from directives for teachers in the Methodological Guide that establish an interdisciplinary epistemological framework that is contradicted by the disciplinary-based architecture of the curriculum. The 2016 curriculum indicates that teachers are expected to identify real problems and work with authentic and motivating tasks relevant to students' circumstances. Both the 2016 and the 2021 curricula affirm that authentic tasks, problem-solving and project-based methodologies require students to employ interdisciplinary knowledge to solve problems collaboratively. The 2021 innovation reaffirms that teachers should approach the teaching-learning process by employing all subject areas in projects (Ministerio de Educación del Ecuador, 2021b).

At the same time, the Methodological Guide states that the 2021 innovation maintained "the essence and structure of the subject areas, curricular blocks, evaluation criteria and indicators from the 2016 national curriculum" (Ministerio de Educación del Ecuador, 2021b, p. 9). For example, school schedules are organized by subject areas and grades must be reported in each subject area independent from the others.

It is unclear why the Ministry of Education maintained a disciplinary-based curriculum architecture for the 2021 innovation if teachers and students are expected to apply interdisciplinary knowledge in a project-based methodology. Giving the responsibility to teachers to translate segregated subject areas into cohesive bodies of knowledge for student application in authentic projects and then report grades in each subject area separately is an undue burden that creates confusion at all levels of the educational system. Teachers resolve the confusion by teaching and grading within subject areas even as they organize projects to satisfy administrative requirements. Such contradictions generate much more than epistemological dissonance and turmoil as they force teachers to ignore key

curricular and methodological provisions, and quality planning and teaching, in order to fulfill administrative responsibilities.

Epistemology, code 3: ESD validates abstract learning

For the 2021 curriculum innovation, slight changes were made in curriculum standards for Science, Social Studies, and English as a Foreign Language (EFL), and not for Language and Math, or other subject areas. The Methodological Guide addresses this decision by considering Language and Math as crosscutting the whole curriculum due to their instrumental nature. Therefore these subject areas are not oriented towards specific sustainability content. Rather, their purpose in the 2021 contextualized innovation for Galapagos is to complement or express the interdisciplinary, sustainability-oriented work that can be generated from the Science, Social Studies, and EFL subject areas. No explanation is provided as to why some subject areas are considered instrumental and abstract, and therefore unable to be contextualized, and others non-instrumental or applicable and susceptible to contextualization. Teachers are encouraged to contextualize the curriculum through their own initiative and creativity, but the areas of Language and Math are presented in the curriculum as expressions of universal or generic truths, as abstract and distant from people's reality in Galapagos, unlike Science, Social Studies, and EFL.

Epistemology, code 4: Learning is cognitive in nature

Consistent with a knowledge transmission methodology, many curriculum standards promote the perspective that learning is cognitive in nature. The 2016 national curriculum couches standards as skills and articulates them starting with verbs such as research, observe, highlight, recognize, explain, design, describe, and compare. In fact, the Spanish word for standards used in the 2016 national curriculum is “destrezas”, which means skills.

The stated purpose is to orient teachers towards active teaching methodologies in which students are challenged to apply knowledge gained in local projects.

In reality, however, adding a verb to a content-focused phrase rarely produces the desired effect in the 2016 and 2021 curricula. For example, asking a teacher to have students apply a standard like “Highlight the participation and contribution of Afro-descendants in the independence processes of Latin America” (Ministerio de Educación del Ecuador, 2021a, p. 27), may prove challenging to teach as a skill. Another example is when students are tasked to value the contribution of Pedro Vicente Maldonado (CN.4.5.4.), a 16th century scientist born in what is now Ecuador, to science, as it is unclear how a student can demonstrate the skill of valuing. A further example can be seen in the multiple standards that urge students to research, like one in which students should research the principles of natural selection (CN.4.1.15). Research in these standards does not ask students to answer a research question, rather the term is used to mean that students should independently find information about the topic. The research is unrelated to the skill or the knowledge in the standard and is not a verb through which students can apply their new knowledge. Because many of the verbs are challenging to apply as skills, and are often unrelated to the knowledge in the standard, the verbs are often ignored by teachers and such standards are usually taught and assessed as knowledge statements with right and wrong answers rather than skills.

Ontology

At the heart of the critique Land Educators make of ESD and related educational approaches is that settler colonial educational systems validate and “reseat colonial sets of relationships” (Patel, 2016, p. 15). Perceiving elements as ontologically separate from others - minerals, plants, animals, people and the earth itself - projects human nature as individual, isolated, avaricious, and material, and human relationships as contentious. Land

educators contend that such a worldview propels the separation of Indigenous peoples from their land by settler colonists, which Tuck and Yang (2012) qualify as “a profound epistemic, ontological, cosmological violence” (p. 5). The following codes, gleaned from the Land Education literature, represent elements of an ontologically related critique that Land educators make of the ESD learning model:

1. ESD gives credence to place over land;
2. In ESD, place is considered an inert backdrop to the human drama
3. ESD hinges on colonial interpretations of land;
4. ESD is anthropocentric;
5. ESD objectifies elements outside of humanity; and
6. In ESD, relationships with non-human elements are characterized by otherness.

Ontology, code 1: ESD gives credence to place over land

A critical discourse analysis of the 2021 curriculum innovation for Galapagos revealed copious expressions of ontologies that typify settler colonial educational systems. A set of such expressions gives credence to place over land. Land educators critique the concept of place as too narrow because it excludes fundamental aspects of creation such as spirits, sounds, thoughts, energies, emergent systems among many others (Simpson, 2014). Accordingly, the 2021 curriculum upholds basic tenets of Western science by having students identify characteristics and functioning of elements in their environment in a way that implies separation from humanity. For example, students study the functioning of the trophic chain in mangroves (Ministerio de Educación del Ecuador, 2021a), and Interpret maps and satellite images in order to recognize and locate the characteristics of the territory and its geographical features, relating them to possible natural disasters (CS.3.2.5). Geographic and biological features of the environment are presented as entities isolated

and independent of human interaction. When physical phenomena are studied in isolation from relationships, they lose meaning to the student. Studying material phenomena through Western scientific methods as if they were outside and separate from humanity and bereft of any meaning or relationship transmits a Western worldview.

Ontology, code 2: In ESD, place is considered an inert backdrop to the human drama

Similar expressions of separation in the 2021 curriculum give the impression that place is an inert, meaningless backdrop to human experience. Typical of many of the 2021 curriculum standards that direct students to understand material phenomena as separate entities, one challenges students to investigate and explain the properties of living beings and infer their importance for the maintenance of life on Earth (CS.3.2.5), as if living beings and the Earth were discrete elements. In the same vein, another directs students to explore and identify the levels of organization of living matter, according to the level of complexity (CS.3.2.5), using language of otherness, as if living matter were independent from humanity.

Ontology, code 3: ESD hinges on colonial interpretations of land

A corollary belief for those who consider land as a mere backdrop to human activity, is that uncultivated and unexploited land is considered uninhabited and wasted (Bang et al., 2014). In the 2021 curriculum, Galapagos is put forward as an example of a place that needs human intervention in the form of conservation, the prevention of decay, waste and loss. Galapagos is described as a “classic paradigm” (Ministerio de Educación del Ecuador, 2021a, p. 8) of the achievements of conservation, representing the challenges and opportunities of managed land. Establishing a national park in Galapagos and taking compelling and effective steps to end upwards of 480 years of exploitation of wildlife by pirates, buccaneers, whalers, and museum collectors is undeniably laudable and necessary.

Galapagos' reputation as one of the best preserved island ecosystems in the world, even despite centuries of exploitation, is richly deserved. At the time of the creation of the Galapagos National Park in 1959, a conservation model excluding the public from the park except when accompanied by a professional and certified guide, to give native and endemic wildlife opportunities to thrive, is logical given that people were the exploiters. A policy excluding the public from protected lands is consistent with conservation strategies all over the world. Sixty-four years later, the Park continues with the same approach: land gains value through human intervention to exclude the public. Because no vision or strategy is in place to build capacity in the Galapagos general population to eventually move more freely inside the Park, it is apparent that excluding the general population from the Park is a key conservation tenet in Galapagos.

The Galapagos National Park's strategy of excluding the general population from the Park is reinforced in the 2021 curriculum. For example, one of the elements of the exit profile, or the overarching goal for all high-school graduates expressed in the 2021 curriculum, is that they should "Evaluate the impact that the population has caused on the environment and act in favor of the conservation and sustainable development of the islands" (Ministerio de Educación del Ecuador, 2021a, p. 12). The logic goes that when people have exploited the islands, then they are the villains, and the islands need protection from them through conservation and sustainable development. However, when the "population" acts within an exploitative economic model based on the unlimited accumulation of capital at the expense of "... all aspects of creation: landforms, elements, plants, animals, spirits, sounds, thoughts, feelings, energies and all of the emergent systems, ecologies and networks that connect these elements" (Simpson, 2014, p. 15), one may ask what role such a *system* has had in the impact on the environment referred to in the 2021 curriculum. Conservation and sustainable development are put forward as the solutions to the "impacts that the population has caused" (Ministerio de Educación del

Ecuador, 2021a, p. 20). However, Land educators consider conservation and sustainable development as an attempt to greenwash, or publicly infer a profound change in the economic and development model that caused the problems in the first place without challenging its core precepts.

One of the standards (or skills) of the science curriculum for middle schoolers is to “Identify cultural expressions that promote the conservation of the natural environment and biodiversity of the Galapagos Islands in recognition of the rights of nature” (Ministerio de Educación del Ecuador, 2021a, subnivel bachillerato, CS.3.2.5). Some context is necessary to discern a call to respect the rights of nature in an official curriculum and its ontological implications.

The Rights of Nature

International environmental law aims to regulate environmental destruction instead of stopping it. A fundamental principle of Western law is that nature is property, it exists to be used, and that only through labor and extraction does land become valuable. Intended to combat such a trend, the premise of giving rights to nature is that nature takes on personhood, and therefore legal standing. In Western legal thought, the person is an inviolable individual and is the holder of rights. Individualism, “a social theory advocating the liberty, rights, or independent action of the individual” (dictionary.com, 2023), becomes the foundation of the rights approach. Activists have used the rights of nature strategy to sue polluters and other entities responsible for environmental damage on behalf of rice (manoomin in Ojibwe) filed in tribal court in the US, rivers, and the Los Cedros cloud forest in Ecuador, among others, to restore and safeguard the plaintiffs.

Although the personhood of nature is often seen as a bridge between Indigenous and Western legal thought, Tanasescu (2022) qualifies this relationship as a “trope of scholarship and news coverage” (p. 129). Superficially, the rights of nature appear to uphold

an Indigenous worldview. Indigenous groups in Ecuador initially supported the 2008 Constitution that enshrined the rights of nature, but soon retracted.

In the 2008 Ecuadorian Constitution, Pachamama, the Earth Mother revered by the Indigenous people of the Andes, is an other-than-human figure recognized by the State. Several high profile court cases have tested the rights of nature statutes in the Constitution. The Mirador case of 2013 pitted nature's rights against the human right to development, and the court sided with the latter. Tanasescu (2022) interprets this decision as the "prerogative of a modern state that needs to be integrated within a global economic system predicated on consumptive lifestyles" (p. 124). In fact, since 2008 Ecuador has not slowed environmental degradation, and it continues to "implement environmentally damaging policies" (Chapron et al., 2019, para. 11). Legal and political decisions that seem unfavorable to the rights of nature are practical examples of the consequences of forcing an Indigenous worldview into the ontology of Western legal thought.

The 21st century has seen the rights of nature become tools of the power of the State as the State is the guarantor of rights. The burden of adopting the language of rights in order to interact with the State has fallen on Indigenous groups, even though that language often contradicts their own worldviews. Rights "terminology hides the power of the state to discount those subjects that do not, for whatever reason, possess the characteristics of the desired 'normal person'" (Tanasescu, 2022, p. 133). The compromises required by Indigenous groups for the rights of nature to take hold, both in relationship to the State and in terms of their worldview, have only reproduced longstanding power disparities between Indigenous groups and the State.

The call to teachers and students in the 2021 curriculum innovation to conserve the environment and biodiversity of the Galapagos Islands in recognition of the rights of nature comes with no context about the various interpretations and evolution of the rights of nature discourse. Rather, the concept is presented as a union of Western and Indigenous thought.

The fact that Indigenous groups in Ecuador retracted their initial support of the legal implications of the rights of nature indicates that providing no context to teachers and students represents an ontological misrepresentation of conservation efforts and Indigenous worldviews.

Ontology, code 4: ESD is anthropocentric

A further critique of ESD is that it promotes an anthropocentric worldview. Framing an ESD curriculum that advocates for the rights of nature as essentially anthropocentric may sound contradictory. After all, sustainable development aims to balance social and environmental needs. In the same vein, the rights of nature campaign aims to move an anthropocentric society to an ecocentric society. In fact, the 2021 curriculum openly criticizes anthropocentrism by encouraging teachers and students to “problematize the context, and question the daily practices that society has normalized, in the asymmetric, disconnected and anthropocentric relationship between human beings and nature” (Ministerio de Educación del Ecuador, 2021a, p. 9).

Nevertheless, beyond the rhetoric, no effort is made to purge the curriculum, philosophically or in the standards, from the worldview that spawns anthropocentrism. One page previous to the indictment of anthropocentrism quoted above, the 2021 curriculum states that its aim is to establish a curriculum articulated with the needs of society, putting people at the center of the curriculum. Further, the ESD concept of ‘place’ is a human construct that is centered on the human experience. Several examples of anthropocentrism in the 2021 curriculum have already been set forth in this section, like the discourse on rights of nature that centers the state, treating place as an inert, meaningless backdrop to human experience, and expressions of the belief that uncultivated and unexploited land is considered uninhabited and wasted. Further examples of anthropocentrism regarding

referrals to nature as resources for humans follow below. In the 2021 curriculum, naturalism informs both sides of the anthropocentric - ecocentric debate.

Ontology, code 5: ESD objectifies elements outside of humanity

Consistent with much of the literature used by the Galapagos National Park, the 2021 curriculum uses language of separation that objectifies and commodifies elements outside of humanity. For example, an element of the exit profile, or the overarching goal for all high-school graduates expressed in the 2021 curriculum, aims for students to “Act with equity, tolerance and solidarity in the conscious and ecological use of natural resources” (Ministerio de Educación del Ecuador, 2021a, p. 12). Similarly, the 2021 curriculum considers the “resources” (Ministerio de Educación del Ecuador, 2021a, p. 31) of the immediate environment as an instrument to relate the experience of the students with school lessons. Students are taught that water is vital for all species, and a fundamental human right. The introduction to the curriculum further reiterates that students need to become familiar with and reflect on in light of daily experience, human rights and the rights of nature, a discourse that, as has been established previously, rests on the isolation of humanity from nature. Along with referring to nature as resources throughout the 2021 curriculum, the curriculum also refers to a variety of natural elements as sources of energy, food, work and opportunities for scientific progress (see for example: CN.3.6.6). Even when the curriculum strives to establish balance between humanity and nature, it often frames the relationship in terms of production and consumption of goods (see for example, CN.B.5.6.1).

Ontology, code 6: In ESD, relationships with non-human elements are characterized by otherness

The 2021 curriculum characterizes relationships with non-human elements by distinction, distance, detachment and otherness. As an example, the 2021 curriculum

instructs teachers to develop students' "maximum potential without jeopardizing nature" (Ministerio de Educación del Ecuador, 2021a, p. 7), a language that assumes that people and nature develop in isolation. The 2021 curriculum encourages students to respect, value, comprehend, and appreciate nature, and students should learn to not "interrupt the local ecosystem" (Ministerio de Educación del Ecuador, 2021a, p. 9). Many of the standards assume that human activity damages nature and therefore ask students to research consequences of people's actions on the environment (for example, see CN.4.1.13). Many of the standards propose that students analyze specific aspects of the environment and the impact of human activity on their functioning (see for example CN.4.4.9). Together with their teachers, students are asked to establish plans of action in favor of nature coherent with their context. Finally, a standard calls for students to "generate a critical, reflective and responsible attitude in favor of the environment" (Ministerio de Educación del Ecuador, 2021a, subnivel bachillerato, CN.B.5.1.22). All of these curriculum standards convey to teachers and students that nature is outside of humanity, an object of our attention.

Axiology

The primary axiological critiques gleaned from the Land Education literature relate to how ESD curricula assume the stability of current power structures and the existence of a materialist worldview. Implications are far-reaching for an ESD curriculum that aims to empower teachers and students as place-makers for the present and into the future. As place-makers, students learn to value their place and how it affects and is affected by larger, global forces that create and perpetuate power dynamics. Some ESD curricula take a more critical stance towards specific expressions of power. As students gain deeper in-the-field understandings of power structures, they gain abilities to rise up and promote justice for marginalized groups, for animals and for the earth itself to strengthen equitable and harmonious relationships between groups of people and their places. Nevertheless, Land

educators critique how settler colonialism and ESD value universal truths, often related to settler stability or current power structures, that shield students from rethinking the materialist relationships that seat oppressive power in the first place.

The following codes, gleaned from the Land Education literature, represent elements of an axiologically related critique that Land educators make of the ESD learning model:

1. In ESD, present settler stability is presumed;
2. ESD empowers students to move within current power structures;
3. ESD validates a materialist worldview.

Axiology, code 1: In ESD, present settler stability is presumed

The 2021 contextualized curriculum promotes changes in social, economic, environmental, and cultural aspects of Galapagos society, and simultaneously situates teachers and students in a stable, favorable context that they learn to maintain. On the one hand, the 2021 curriculum consistently promotes change by stating, for example, that “The shift towards sustainability in the Galapagos implies a profound change in lifestyles, expectations and social, environmental and economic conditions” (Ministerio de Educación del Ecuador, 2021a, p. 12). Many standards employ similar language to move students to understand their context and carry out projects that aim to address social, economic and environmental issues. For example, one element of the exit profile for Galapagos students, the highest expression of intent for the 2021 curriculum, aspires for students to “Evaluate the impact that the population has caused on the environment and act in favor of the conservation and sustainable development of the islands” (Ministerio de Educación del Ecuador, 2021a, p. 12).

On the other hand, a deeper reading of the 2021 curriculum reveals an acceptance of the status quo. For example, the exit profile states that upon graduating, students should

be able to “Internalize and comply with the management rules of the institutions that regulate the various activities in Galapagos” (Ministerio de Educación del Ecuador, 2021a, p. 12). Terms of the exit profile determine the tone of the entire curriculum, and many specific standards.

Axiology, code 2: ESD empowers students to move within current power structures

Perhaps the highest expression of conformity to settler stability is in the introduction to the 2021 curriculum as it proclaims its goal to “Promote the values and principles that underpin the sustainability approach” (Ministerio de Educación del Ecuador, 2021a, p. 16). Few people argue against such widely-accepted values like “sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development” that are proclaimed in the literature about the Sustainable Development Goals (SDG’s) (United Nations, 2022a). Nonetheless, the Land Education literature provides a critical perspective on the values and principles that uphold Education for Sustainable Development (ESD), a “key enabler of all SDG’s” (UNESCO, 2017). The Land Education literature reveals that despite its pro-change rhetoric, sustainable development and ESD affirm current power structures because settler stability is presumed. The ecological crises that have provoked the emergence of ESD and its many predecessors, not to mention the social and economic inequities experienced by the majority of the world’s inhabitants, are a direct consequence of current power structures.

The 2021 curriculum centers 14 essential topics, key sustainability issues and problems for Galapagos consistent with the 17 SDG’s from the United Nations, an entrenched world power structure. One of the standards asks students to compare the economic and social situation of developed and developing countries (CS.4.1.59). The

context of this standard is not clear, but assigning countries status along a development continuum ratifies a Western development model. Further, students learn to determine the historical evolution of the social demands of peoples and nationalities, based on the construction of an inclusive and sustainable state (CS.EC.5.3.5). In these standards, the power dynamics of the United Nations, its programs, and the State are assumed and their services to groups in response to their demands are identified as the key to progress.

Accepting current power structures implies learning to ably move within them. At one point in the curriculum, students are instructed to appreciate the concept of an “ecological footprint” (Ministerio de Educación del Ecuador, 2021a, p. 14). It is public information that British Petroleum first promoted and popularized the term “carbon footprint” to “promote the slant that climate change is not the fault of an oil giant, but that of individuals” (Solnit, 2021, para. 3). Carbon footprint is a subset of an ecological footprint, but the concepts are equivalent. They both seek to mitigate or offset individual impact on the environment, masking corporate responsibility for damage. Another example in the 2021 curriculum is that students are tasked with planning for “sustainable solid waste management in the Galapagos Islands” (Ministerio de Educación del Ecuador, 2021a, p. 14). Sustainable resource management implies an economy not based on consumerism which encourages the acquisition of goods and services in ever-increasing amounts. The 2021 curriculum does not address the role of consumerism in resource management, effectively assuming the continuation of consumerism which allows students to gain abilities to move within current cultural and power structures.

Axiology, code 3: ESD validates a materialist worldview

One way the 2021 curriculum promotes a materialist worldview is by exalting economic relationships and growth. As an example, students are charged with promoting “necessary economic growth that improves their social welfare, while preserving the

environment” (Ministerio de Educación del Ecuador, 2021a, p. 12). Similarly, the economy is presented to students in terms of the “processes” of goods, services, and merchandise (Ministerio de Educación del Ecuador, 2021a, p. 13). A push for economic growth in terms of goods, services and merchandise reflects the language of Sustainable Development Goal number 8 that promotes “sustained, inclusive and sustainable economic growth” (UNESCO, 2017, p. 26).

Without entering into controversies surrounding the validity of economic growth as the engine of sustainable development, a materialist worldview is promoted by proclaiming that the production and exchange of goods, services and merchandise at ever increasing volumes and speeds can positively affect social welfare and the environment. Such a position defines social and environmental processes and relationships in materialist terms, and is consistent with official United Nations policies. An example, as mentioned earlier in this dissertation, is the adoption in 2021 by the United Nations of the System of Environmental-Economic Accounting - Ecosystem Accounting (SEEA-EA) was hailed as a “game changer” (UN News, 2021) because no longer would environmental degradation be considered as economic progress. The SEEA-EA, however, by employing terms like “aquatic resources” (United Nations, 2022b, p. 7) referring to fish, and “use values,” (United Nations, 2022b, p. 9) which measures value gained by people derived from interaction with the environment, affirms a materialist worldview. Prevalent discourses about economic growth and development employ these same terms and concepts, affirming a materialist worldview.

Another way the 2021 curriculum promotes a materialist worldview is by conspicuously replacing references to spirituality with emotions and rights. Students are instructed to acquire artistic techniques for their creative and emotional expression (Ministerio de Educación del Ecuador, 2021a). Further, the curriculum promotes “emotional education” through literature, art, drama, music and culture that “debate and illustrate

situations and a path towards sustainability” (Ministerio de Educación del Ecuador, 2021a, p. 13). Framing artistic expression exclusively as “emotional education” detracts from an intangible human capacity of a transcendent nature. Regarding rights, one standard proclaims that students should “recognize that all the inhabitants of the world are linked through the respect and promotion of universal human rights, declared by the United Nations” (Ministerio de Educación del Ecuador, 2021a, CS.2.3.12). Human rights promoted by the UN are universal and do link all people, but such a statement proclaims a worldview in which humans have nothing deeper than rights in common, nothing beyond an abstract legal concept to unite their aspirations.

Historicity

Introduction

Teaching history is not a central element of Education for Sustainable Development. Several authors referenced in the introduction to this study assert not only that teaching history should take a more central role in ESD, but that teaching critical history should allow students to explore “the historical memory of a place” (Bang et al., 2014, p. 42) to gain awareness of Indigenous traditions that celebrate place. Demarest (2014) encourages teaching of “‘hidden stories’ of violence, genocide, or cultural oppression in a place that have been silenced over time” (p. 8). Gruenwald (2003a) asserts that all places are “products of human decisions” (p. 627), making students complicit in the political processes and power structures from which the current characteristics of a place have emerged. ESD defines students as place-makers, an undertaking that requires a thorough knowledge of history and equal commitment to shape the present and future of people and places.

At its weakest, ESD attaches little value to the history of a place and offers no critical insights into the dark aspects of that history. As Gruenwald (2003a) and Calderón (2014)

suggest, ESD glosses over colonial legacies and particularly how conceptions of place have been involved in their continuance. Sleeter (2005) labels history that minimizes and ignores unpleasant historical facts and events indicating exploitation and violence as historical whitewashing. Such a stance affirms colonial interpretations of land as property that gains value through exploitation, an act of violence that disengages Indigenous people from their land.

At its strongest, Bang et al. (2014) applaud the assertion of some Place-Based Education proponents, and therefore ESD proponents, that ESD should place teaching critical history at its center, especially if it includes a revision of Indigenous history. Nevertheless, Land educators argue that there is even danger in teaching truthful history if present settler stability is presumed (Bang et al, 2014). Land educators point to the faulty epistemological and ontological foundations of historical thought in ESD by affirming that a relationship with land can be the foundation for all knowledge because of the historical bond that makes the self and the world a single entity. Calderón (2014) asserts that there is little use in teaching about coloniality if no effort is made for students to think about what non-colonial relationships might look like.

Human History of the Galapagos Islands

At this point, some context is necessary to gain perspective on human history in Galapagos because giving importance to teaching Indigenous history on the Galapagos Islands may cause confusion in the reader. Most popular literature, brochures, and websites about the human history of Galapagos do not mention Indigenous people at all, and those that do say that there is speculation that Indigenous people may have used the islands as a stopover on ancient trading routes, and that there is no written evidence or ruins to verify this hypothesis. All popular literature says that the islands were officially discovered in 1535 by Fray Tomás de Berlanga, the Bishop of Panama at the time. These sources also mention

that the single most important event in Galapagos history is Charles Darwin's visit in 1835. It is also a common belief among Galapagos residents that the islands have no Indigenous history.

There are two reasons to teach the Indigenous history of a place where the existence of Indigenous history is in dispute. First, Land educators uphold teaching Indigenous history as a principle everywhere. Second, the Galapagos Islands do have Indigenous history.

A Western worldview steeped in empiricism and rationalism shields the mind from experiencing and understanding the Indigenous concept of land. As mentioned in the literature review, land and people are both sentient beings, and as such humans and land form a bond so that "land is not generalizable the way space and place are generalizable. Land is both people and place, that is, Native people constitute and are constituted by land" (Paperson, 2014, p. 124).

The history of land is unrelated to written records or ruins. Land reveals its history to those who read the cosmos because it is storied, relational, and intimate (Styres, 2018). Land is in people as much as people are in land, and there are therefore multiple layers of memories that contain valuable information (Styres 2018).

Aloha'āina critically engages observational, interpretive, and expressive skills that read the cosmos, conduct and participate in ceremonies, as well as listen for and find meaning in the responses from their places (wind, rains, animals, trees, waterways, etc.)—aloha'āina is about "writing themselves into the landscape. (26)

For Styres (2018) all people have the capacity to live in intimate relationship with Land if they commit to journeying:

Whether someone chooses to acknowledge it or not, we all exist in relationship to each other and to this land—a land that has and still does exist first and foremost in relationship to Indigenous people. Having said that, anyone can and should live in a

reflexive relationship to their places, and they often do so without ever understanding or acknowledging the fundamental being and philosophical nature of Land or with the deeply intimate sacredness of the relationships Indigenous peoples have, not only with their places but also to Land. For those who want to live in deeply sacred and intimate relationship to Land must understand that it first and foremost requires a respectful and consistent acknowledgment of whose traditional lands we are on, a commitment to journeying—a seeking out and coming to an understanding of the stories and knowledges embedded in those lands, a conscious choosing to live in intimate, sacred, and storied relationships with those lands and not the least of which is an acknowledgment of the ways one is implicated in the networks and relations of power that comprise the tangled colonial history of the lands one is upon. (p. 28)

Seeing and experiencing Indigenous history embedded in the land of the Galapagos Islands is a choice people can make and a capacity people can build.

The concept of land gives the Galapagos Islands Indigenous history even though physical occupation of Galapagos before the Spanish conquest is disputed. Vestiges of indigenous ceramics were found in several sites on Santa Cruz island. Heyerdahl and Skjolsvold (1956, 1990) claimed that the ceramics substantiate fishing camps in the Galapagos Islands before the Spanish Conquest. A subsequent archaeological excavation concluded that, even though the Galapagos Islands represent a “huge target of inter-visible islands” raising the likelihood that they would at least be found by Indigenous sailors, and although certain pieces unearthed by the Norwegian Expedition (conducted by Heyerdahl and Skjolsvold) constitute “potentially valid evidence” (Anderson, et al., 2016, p. 181) of prehispanic materials on Galapagos, the original findings are unsubstantiated.

From 1832 to the early 1900's two haciendas (large estates) were formed for human colonization of the Galapagos Islands. The owners forcibly transplanted Indigenous laborers from the mainland to the haciendas. The majority of these Indigenous laborers originated

from Tungurahua province in the Andean highlands, and some of them were from the parish of Salasaka (Sánchez Voelkl, 2022). Considered the first inhabitants of San Cristóbal and Isabela islands, some current Indigenous residents in Galapagos may be descendants from these original laborers. After a wave of new immigrants in the 1990's motivated by special residency incentives, the Salasakas now make up between 12.5% and 20% of the inhabitants of Santa Cruz island (Vervloet, 2013; Sánchez Voelkl, 2022).

Sánchez Voelkl (2022) provides an overview of the current situation of the Salasaka people on Galapagos that is significant for an inquiry about historicity from a Land education perspective. Two factors contribute most to the situation of the Salasakas in Galapagos today. First, the Salasakas on the Ecuadorian mainland have traditionally kept white and mestizo Ecuadorians out of their territory. Salasaka, the parish on the mainland, is known as a zone of "cultural refusal," a place of resistance to cultural influences, including mestizaje (racial mixing) (Sánchez Voelkl, 2022, p. 6). As a consequence of rejecting the state-making projects, Salasakas are regarded on the Ecuadorian mainland as outsiders. Second, the Galapagos Special Law passed in 1998, referred to by Sánchez Voelkl (2022) as the "conservation" law, imposed "new legal categories that reflected Western understandings of nature and property, embedded in the making, use, and governance of heritage sites" (p. 20).

Consequences of these two factors are far reaching for the Salasaka people in Galapagos. For example, the local migration authorities - under the guise of enforcing the 1998 law - frequently persecute and deport Salasakas from Santa Cruz. Also, a movement has been put in motion to change the name of the Salasaka area on Santa Cruz island, which Sánchez Voelkl (2022) attributes to an "obsessive desire of the mestizo Galapeguños to hide, by all accounts, their own indianness" (p. 11). Additionally, Salasakas are commonly referred to as "introduced," "illegals," "alien," "invasive," or as "a plague," employing the language categories that conservation science uses to categorize

flora and fauna (Sánchez Voelkl, 2022). Salasaka teachers have reported receiving discrimination in and outside of schools, and hearing racist talk towards them (Román et al., 2022). Lastly, Sánchez Voelkl realized that despite having lived in Puerto Ayora (the main city on Santa Cruz Island) for decades, none of the Salasakas with whom she shared her time had had access to the emblematic places of the Galapagos National Park.

Sánchez Voelkl (2022) repeatedly asserts that not only are Galapagos residents uninterested in the history of the Salasaka people in Galapagos, but also human history in general in the Galapagos tends to be silenced. Space has been created for nonhuman narratives related to conservation to take their place. Exceptions to this rule are the account of Charles Darwin's visit and popular stories about tragedies, mysteries, and crimes among early European and Ecuadorian settlers. Ignoring the human history of Galapagos, especially Indigenous history, can be attributed to the "vernacular visions of race and social order" that reveal "how conservation law is translated and enforced in the Ecuadorian archipelago" (Sánchez Voelkl, 2022, p. 3). Another aspect of human history that is silenced is the centuries of plundering of fauna by whalers, buccaneers, pirates, and zoo specimen collectors.

Historicity Codes

Returning to the results of the critical discourse analysis of the 2021 curriculum, the following codes, gleaned from the Land Education literature, represent elements of a historicity-related critique that Land educators make of the ESD learning model.

1. ESD engages in historical whitewashing
2. ESD fails to meaningfully engage colonial legacies in education
3. ESD imposes assimilation by erasing the past
4. In ESD, Indigenous survivors are forced to forget the past to accept settler futures

5. ESD places much more importance on the present and future status of a place than its history
6. In ESD, history is taught through fact-based methodologies

Historicity, code 1: ESD engages in historical whitewashing

It is necessary to recognize that the 2016 curriculum, and therefore the 2021 curriculum, includes half a dozen standards that critically review historical events and biographies in South America and in Ecuador of women, Afro-Ecuadorians, and Indigenous people. They survey the impact of the Spanish Conquest on Indigenous groups (CS.H.5.3.10), the invisibility and exclusion of women and Indigenous movements (CS.H.5.2.28), the motivations behind the main Indigenous uprisings in the 18th century and the leaders of each uprising (CS.H.5.3.34), the causes and consequences of the process of evangelization in the Indigenous world (CS.H.5.3.12), the contribution of Afro descendants in independence processes of Latin America (CS.4.1.37), and the historical background of the Afro-Ecuadorian community in Esmeraldas and El Chota (CS.H.5.3.17). However, except describing Charles Darwin's sojourn in the enchanted islands, the 2021 contextualized curriculum makes no mention of the human history of Galapagos.

The 2021 curriculum makes two mentions of the history of the Galapagos Islands. The first presents the Islands as a historical "hotspot for research in natural sciences," because they are "sheltered in settings of incomparable beauty" (Ministerio de Educación del Ecuador, 2021a, p. 8). The remaining mention is a standard that refers to biodiversity and the evolution patterns of native and endemic species (CN.B.5.1.19). One other standard calls for students to analyze the most relevant historical fact of the province (no province is specified) and describe it orally, in writing, or graphically (CS.2.1.7), opening an opportunity to study an aspect of the human history of Galapagos at the discretion of teachers and students. Neglecting the human history of the Galapagos Islands, the 2021 contextualized

curriculum precisely exemplifies historical whitewashing by minimizing and ignoring “prejudice, racism, discrimination, exploitation, oppression, sexism, and inter-group conflict” (Sadker, n.d.) that characterize the human history of Galapagos.

Historicity, code 2: ESD fails to meaningfully engage colonial legacies in education

The introduction to the 2021 curriculum takes a critical position towards historical labor relations in Ecuador although it is not expressed in any of the curriculum standards. A single statement critiques the structure, roles, functions and processes of the historical social division of work and enjoins teachers and students to bolster the development of decision-making capacities, choice, autonomy, and cooperative work, for the creation of alternatives and improvement of quality of life (Ministerio de Educación del Ecuador, 2021a). Such a promising position on labor is left hanging because the colonial legacies from which historically imbalanced labor relations emerged are not explored in any standard, or content in the curriculum. When teachers and students study labor relations in their locality, they will be seen as contemporary disagreements between capital and labor. Overlooking historical social divisions of labor, teachers and students miss an opportunity to see how erroneous conceptions of place are involved in the continuation of colonial legacies.

Similarly promising positions are put forth in the curriculum about other topics. For example, a sweeping statement about cosmos, biodiversity, people and territory invites students to understand the “interrelation and interdependence” (Ministerio de Educación del Ecuador, 2021a, p. 13) between terrestrial and maritime ecosystems, the impact of introduced species, and the human occupation of the territory in order to seek balance and harmony between culture and nature. Along the same line, a history standard (CS.H.5.2.30) summons students to identify and contextualize the claims of the environmental and ecofeminist movements from their critique of the mercantilist vision of Mother Earth

(Pachamama). Both statements invite critical thinking about relevant topics for Galapagos students. However, even though the latter statement is a history standard, references to occupation, imbalance, disharmony, ecofeminism, and an anti-mercantilist vision of Mother Earth, bereft of any connotation of power imbalances, exploitation, manipulation, and violence, imposes assimilation. Hiding, denying or erasing the historical forces that shape the present gives teachers and students the impression that environmental, economic, and social problems are normal, and will inevitably continue into the future.

Historicity, code 3: ESD imposes assimilation by erasing the past and

Historicity, code 4: In ESD, Indigenous survivors are forced to forget the past and accept settler futures

Indigenous people and culture in general, without identifying specific groups, are presented in the 2021 curriculum as models to be emulated. A history standard (CS.H.5.3.2), presents Indigenous ancestral knowledge, forms of life, and social organization as vital links between people and the planet, and holders of great capacity for innovation and creativity. At the same time, the 2021 curriculum fails to mention, and therefore erases, the violent, centuries-long process of severing Indigenous people from their land. Although the standard that exalts the qualities of Indigenous people is written in the present tense, implying an exaltation of both past and present Indigenous characteristics and culture, the curriculum does not engage with modern issues, struggles, and triumphs of Indigenous communities, and how many of the issues and struggles are caused by their marginalization and oppression by the groups that control power structures. Rather, the 2021 curriculum seems to assume assimilation, thus imposing assimilation. As a consequence, the victimized groups of settler colonial scenarios are “forced to forgive and forget, they are forced-fed with convenient versions of the past and an equally comfortable way into the future” (Solis, 2017, p. 201).

Historicity, code 5: ESD places much more importance on the present and future status of a place than its history

The 2021 curriculum follows the general ESD principle of placing greater importance on the present and future status of a place than its history. Of the many statements and standards that enjoin teachers and students to understand and analyze some aspect of the present and future, a few stand out. For example, the introduction to the 2021 curriculum urges students to recognize demographic growth as an aggravating factor for the ecological stability of the Galapagos Islands (Ministerio de Educación del Ecuador, 2021a). People are presented as a problem towards achieving the greater goal of ecological stability. Indeed, population pressures on limits imposed through the 1998 special law are a unique issue considering that tens of thousands of people live inside a national park with hard physical boundaries. Even if ecological stability were the overarching goal, a historical perspective is necessary to see that the problem is not demographic growth per se, but a litany of issues like economic instability on the Ecuadorian mainland, and a populace that is alienated from the national park and not invited or educated to understand and respect the limits imposed on human development.

Two social studies standards also point to giving importance to the present and future over the past. In the first, students learn to collect information about the ancestral knowledge of Indigenous medicine, Afro-Ecuadorian and Montubio peoples of Ecuador, and advocate for their importance in the discovery of new medicines (CS.H.5.3.12). In the second, students analyze and value each of the social foundations of Ecuador (Indigenous, Afro-Ecuadorian, Mestizo and Montubio) as a path to understanding otherness and social harmony (CS.ED.5.3.3). In both, the stated reason to investigate marginalized groups is to reap future benefits.

Historicity, code 6: In ESD, history is taught through fact-based methodologies

Finally, the 2021 curriculum presents history as a series of chronological and fact-based events, leaving no room for alternative perspectives of history. Perhaps the best example of such methodologies is a standard in which students learn to “plan and execute an inquiry into the evolution of knowledge about the composition of matter, from the ideas of the Greeks to modern theories, represent it on a timeline, and infer changes in science over time” (CN.3.5.9). The history of knowledge about the composition of matter, like many other topics in the 2021 curriculum, is an opportunity to explore Indigenous worldviews. However, summarizing approximately 2,500 years of the history of a topic into a timeline about which students can make sweeping inferences is not a methodology that lends itself to depth, exploration of ideas, or meaningfully comparing worldviews.

Critical Discourse Analysis of the Interview Transcripts - Findings / Results

Between October 9 and November 9, 2022, I carried out eight interviews. Two each with representatives from Galapagos Conservancy and the Charles Darwin Foundation and one each from the Galapagos National Park, the Ministry of Education, the Scalesia Foundation as well as one of the members of the team that authored the 2021 curriculum innovation for Galapagos. The Interviews were all carried out in Spanish except for one and their average duration was 40 minutes.

The following results are not reported in a linear format that permits simple classification into each of the four codes selected within the category of epistemology. Rather, the results are presented using a narrative format that illustrates expressions of

codes 2, 3, and 4 in a way that weaves them together. Code 1, that in ESD learning is transactional, was not identified in the interview transcripts. Each of the three subsections that follow, organized around significant events in the origin of the 2021 curriculum and around debates among education and conservation leaders about education innovation in Galapagos, illustrates that the 2021 curriculum innovation, as a process and product, reflects epistemology-related ESD characteristics targeted in the Land Education literature. Specifically, the subsections indicate how learning and knowledge are nouns that can be acquired, stored, and measured: how ESD values abstract learning that is personless and landless; and how in ESD, learning is cognitive in nature (codes 2, 3, and 4).

Epistemology

Ministry Approval Process of the 2021 Curriculum Innovation

Through a complex approval process in compliance with the Organic Law of Intercultural Education, the legal framework for education and curriculum in Ecuador, the Ministry of Education allows for innovations to the 2016 national curriculum. All innovations are still considered branches from the same curriculum. If a school proposes to use a different curriculum, it will only be allowed if it is proven to fulfill the national curriculum standards. The 2021 contextualized curriculum innovation for Galapagos is contained within the 2016 curriculum, and both curricula are considered as a single curriculum. The 2021 contextualization is not a new curriculum: “It is the same national curriculum, nothing has been changed. Some new standards (skills) were added. It is not a new curriculum” (“Carolina”).

It is logical to assume that the 2021 curriculum does not need a new philosophical foundation because it is not a new curriculum. The absence of a philosophical exploration of the foundational concepts of the 2021 curriculum may therefore come as no surprise.

However, because the 2021 curriculum identifies ESD as its theoretical underpinning, a broader concept than the most prominent theoretical underpinning of the 2016 curriculum which was Contextualized Teaching and Learning (CTL), or simply contextualization, it is necessary to justify and substantiate the new orientation. Further, because they are essentially the same curricula, it seems necessary to articulate how ESD is coherent with contextualization or CTL.

Published documentation for the 2021 curriculum innovation gives the impression that no effort was made to justify or substantiate ESD as its philosophical underpinning, or articulate ESD with contextualization. No literature review is present, nor are results from the multiple gatherings held by the 2021 curriculum authors to justify the new educational philosophy behind the curriculum and gather input from community and education leaders, even though both are required products of the contract signed by the authors. One interviewee stated emphatically when asked about the philosophical foundation of the 2021 curriculum that “nobody has given any thought to it at all” (“Juan”).

Interviews with the authors of the 2021 curriculum, however, reveal a different story. The authors presented an elaborate literature review of ESD along with results of the multiple gatherings held with leaders in Galapagos to substantiate the innovation. Preliminary documents were socialized in the gatherings in Galapagos, but final versions were not published. According to the authors, the substantiating documents were not published because they had little influence over the final version of the 2021 curriculum.

The authors used their literature review and the results of the participative gatherings in Galapagos with leaders to reform the 2016 curriculum, to contextualize it. The proposed curriculum for Galapagos substantially altered content based on new standards stemming from the literature review and the gatherings with leaders. A contextualized curriculum demanded breaking up the subject-based scheme of the 2016 curriculum to base a more interdisciplinary approach on basic tenets of sustainability such as interdependence. The

standards in this new scheme were connected one with another logically among subject matters using an interdisciplinary approach. The authors say that this “horizontal” reordering of traditionally oriented “vertical” subjects allowed visualization and expression of foundational ESD principles and methodologies: “By proposing an interdisciplinary curriculum, it was a more horizontal proposal in which skills are developed in capacities that connect with each other and not so much by subject. This structure allowed ESD to be implemented” (“Jaime”). Both content and pedagogy aligned with ESD principles in the proposal.

The curriculum department of the Ministry of Education rejected the “horizontal” approach to subject organization saying that the proposal deviated too far from the 2016 national curriculum to be considered an innovation:

The Ministry rejected the proposal and said that the nature of the curriculum is vertical, it is disciplinary and that they could not change it... They told us that above all else we should use the existing curriculum. It means a focus on content, we have a content-focused education system. It is not focused on students, nor on processes, nor on capabilities. It is on content.” (“Jaime”)

A related justification was that the innovation proposal could alter certain subject matters, but not others: “They told us that we could modify certain subjects and not others” (“Jaime”), and,

it's the system, some aspects are just not flexible. For example, the creation of some new standards, they just said “no, you can't do that”. So, it was interesting to see how the Ministry wanted to contextualize some things and not others. (“Beatriz”)

The authors went back to the drawing board to produce what is now the published version of the 2021 curriculum. Maintaining the “vertical” subject scheme, the authors contend, impeded the 2021 curriculum from expressing or conforming to the findings in the

ESD literature review and the gatherings with Galapagos leaders. Thus the decision to not publish the literature review and the results of the gatherings with Galapagos leaders.

Much like the epistemological debate about how to organize subject matters for determined philosophical schemes illustrated above, results of the interviews with educational leaders in Galapagos indicate the existence of several active but entirely invisible debates about foundational concepts of education bristling in Galapagos: epistemology, ontology, and axiology. Significant to this study, there does not seem to be any awareness of or debate about historicity among educational and conservation leaders. Results of the interviews will be presented in terms of these debates.

Educational leaders in Galapagos debate the nature and role of knowledge in local education. One group of educators proposes that a variety of expressions of knowledge about Galapagos is the foundation of a contextualized curriculum. Another group, wary of the dangers inherent in divorcing knowledge from meaning, proposes focusing ESD-based contextualization on appropriate pedagogy. Epistemological perceptions are at the heart of two specific debates reviewed below: how to make changes in the educational system and how to best implement the 2021 contextualized curriculum innovation.

How to Innovate Education in Galapagos

Since the 1990's educational leaders, parents and citizen groups have agitated for an educational experience for Galapagos students that better reflects their context. The first time that these efforts found expression was in 2008 when certain phrases that pointed to realities of Galapagos were added to the national curriculum for use in Galapagos schools. The only other time was in 2016 when Galapagos Conservancy and the Scalesia Foundation began the Education for Sustainability in Galapagos Program (ESGP) which is ongoing and focuses on teacher and administrator training and accompaniment. These two efforts represent distinct strategies to improve education in Galapagos. A curriculum-led

effort can be considered “top down” as it changes policy that affects administrator and teacher behavior, while a training-led effort (ESGP) can be considered “bottom up” as it aims to improve administrator performance and teacher instruction directly, leaving policy untouched. ESD literature does not advocate for a specific implementation strategy, so practitioners are free to choose the approach most appropriate for their circumstances.

All interviewees expressed strong feelings on one side or the other of this debate about how to best make changes in formal education in Galapagos. Several interviewees expressed unbridled enthusiasm for the 2021 curriculum saying that it is the best change to ever happen to education in Galapagos, “honestly from an educational perspective it has been the best thing that could have happened to us as a community, as an exercise in rethinking education” (“Jose”), and that it has brought about shifts in other educational processes like no other strategy could (“Jose”). Proponents alleged that the 2021 curriculum is “the tool that we all hoped for so education could go one step further, at least in Galapagos” (“Jorge”). Specifically, the 2021 curriculum has popularized sustainability related language that connects with the discourse used by local conservation organizations, setting them on the same path of development and allowing for greater collaboration among diverse sectors. Using language commonly found in UNESCO documents about ESD also strengthens connections with the prevalent international discourse about education. Even beyond the educational community, the 2021 curriculum has brought sustainability into popular discourse in Galapagos. Inter-organizational collaboration happens through the Acuerdo Galapagos por la Educación (Agreement for Education in Galapagos) which was inaugurated during the elaboration of the 2021 curriculum. The Acuerdo provides a space for conservation and educational organizations to regularly meet to discuss and collaborate on educational initiatives. One interviewee (“Jose”) mentioned that the 2021 curriculum has also inspired the Ministry of Education to generate movement in the rest of Ecuador, allowing for broader innovations and methodological improvements. Finally, one interviewee

(“Jorge”) stated that Galapagos is living its best moment for education because of the 2021 curriculum.

The rest of the interviewees expressed concern about the strategy of change focused on curriculum innovation and advocated for a more “bottom-up,” teacher-led approach. These interviewees labeled the 2021 curriculum and its implementation process as overwhelming, imposed, irresponsible and pointless. They also dispute the usefulness of joining the education and conservation communities through the sustainability discourse.

The 2021 curriculum took three months to create, and it was inaugurated in April at the beginning of the 2021 school year, mere weeks after its approval. Beyond a series of presentations by the Ministry of Education, a few meetings with teachers and approximately 10 hours of training, very little orientation was provided for teachers to use the 2021 curriculum to begin the new school year (“Juan”). Many teachers felt overwhelmed by the prospect of using a new curriculum without adequate preparation (“Juan”).

Two interviewees (“Juan” and “Beatriz”) expressed that a group of teachers and parents felt that the 2021 curriculum was imposed upon them by the Ministry of Education and conservation organizations, which generated significant resistance to the curriculum and its methodological elements: “The curriculum arrived out of the blue, and without the necessary instruments to be implemented. Why would they dump it on us like that? Processes like that create resistance” (“Juan”). Many teachers and parents attended the participatory gatherings of community and educational leaders about the 2021 curriculum. At these meetings facilitators explained ESD and gathered feedback from participants. Two interviewees (“Jaime,” “Beatriz”) questioned how teachers and parents would feel if they knew that the inputs, both philosophical and practical, that resulted from those gatherings had very little influence on the published version of the curriculum. Interviewees (“Jaime,” “Juan,” “Adriana,” “Beatriz”) alleged that the participatory gatherings during the elaboration of the 2021 curriculum needed to continue for months to creatively build consensus around

the philosophy, topics, methodology, implementation tools, timelines, and teacher and student needs related to the new curriculum. Ownership of the 2021 curriculum does not lie in the educational community, nor does the 2021 curriculum represent its collective will.

An interviewee (“Juan”) also questioned the value of allowing conservation organizations that are not involved directly with teachers to lead a process of educational innovation. The results are predictable. As two interviewees (“Juan,” “Beatriz”) see it, significant changes were made to the curriculum on paper by conservation organizations who then left the organizations that work with teachers to figure out how to implement the changes. As an example, the main achievement of the meetings of the Acuerdo Galápagos por la Educación is agreement on a monthly essential topic to be taught by all teachers at all schools (“Jose,” “Juan”). However, once this topic is selected, teachers have to connect it with the curriculum standards, which are from the 2016 curriculum and often have no relation to the topic. Use of the textbooks (published in 2016) upon which assessments are built becomes problematic because they provide little support for sustainability related topics. Teachers also have to devise and arrange the community context and other methodological and logistical elements for the project (“Beatriz”). Issues related to curriculum implementation will be further explored below. In brief, the interviewees pointed to the irresponsibility of creating an educational innovation on paper and then leaving a problematic implementation process to others.

Interviewees (“Jaime,” “Juan”) see the 2021 curriculum as a simple content swap from educational textbooks to content focused on issues of sustainability. A lack of implementation tools, or methodological orientation, leads teachers to maintain a focus on content that characterizes the 2016 national curriculum. For this reason, interviewees (“Beatriz,” “Adriana,” “Juan”) said that a curriculum change was not necessary. They advocated for a teacher-led methodological change that could fulfill ESD principles more effectively than a content-focused, knowledge-based list of sustainability related topics.

Finally, interviewees (“Adriana,” “Juan,” “Beatriz”) acknowledged the importance of unifying education and conservation organizations in a common discourse, but claim that this has not been achieved in theory or practice. Because ESD is not clearly understood by the education community, in spite of the participative gatherings held during the preliminary phase of curriculum development, the concept of sustainability means different things to different groups.

The issue of sustainability, however, has barely been discussed as a concept. And the challenge is understanding what sustainability means for the different actors, sectors and stakeholders of a system like in Galapagos. And while it is true that everyone uses the word sustainability, I think that little has been discussed and debated about what sustainability means for the tourism, educational, productive, conservation, etc. sectors. There is still a gap in the concept, the definition of what the expected and desired sustainability means for Galapagos and also from an educational perspective. (“Adriana”)

For example, conservation organizations seek sustainability in their research agendas, which is different from the concept as it is promoted by the United Nations. Two interviewees (“Juan,” “Beatriz”) further questioned how using the term sustainability provided practical avenues for collaboration, planning, teaching, or assessment. On paper a common discourse gives the impression of a common vision among organizations involved in conservation and education, but distinct interpretations of the sustainability discourse indicates few results towards the goal of achieving a common vision from the effort to elaborate a new curriculum.

Epistemological differences define the debate about how to innovate education in Galapagos. The top down approach that is represented in the 2021 curriculum innovation sets knowledge acquisition at the heart of the teaching - learning process, knowledge that is

often abstract. The bottom up approach values teacher and student relationships with knowledge that is meaningful to both through a creative process.

How to Implement the 2021 Contextualized Curriculum Innovation

At the heart of the efforts to implement the 2021 contextualized curriculum for Galapagos is an epistemological perception of the concept of curriculum. Questions that emerge from such a perception are the following: Can a curriculum innovation consist only of changes to some of the content? If content is changed through a curriculum innovation, how should teachers work with the textbooks if they have not been changed? Should standards be changed to reflect new content? Should a curriculum innovation imply improvements to content and methodology? Should administrative duties and structures also be reformed to be consistent with content and methodology changes? Can a curriculum innovation preclude a philosophical justification? What consequences come from developing any of these elements - content (including textbooks), standards, methodology, administrative structure and philosophy - incoherently with the others? Is it possible to make substantive changes without calling the product a new curriculum?

Grappling with issues of coherency among the curriculum elements is not new to the Ministry of Education of Ecuador. One interviewee (“Jaime”) recounted many interactions with teachers throughout the country over years that indicated deep disconnections between educational policy and in-classroom practice. An innovation of any kind should aim to make curriculum and administrative elements more coherent with each other. However, the perception among interviewees is that the opposite has occurred in the 2021 contextualized innovation for Galapagos. Content modifications that align with sustainability issues are substantive in the 2021 curriculum. A Curriculum Methodological Guide was also published encouraging teachers to use Project-Based Learning as a methodology appropriate for exploring sustainability issues. Other elements of the educational infrastructure - textbooks,

administrative structure, standards and philosophy - have been left unchanged, except for a few new standards. One interviewee asserted that “without changes in the structure, there is no way to think about changes in the curriculum” (“Jaime”). This section explores the consequences of such a move. One interviewee (“Jorge”) displayed unbounded enthusiasm for the new curriculum, calling it highly innovative, but at the same time mentioned multiple times how challenging it has been for teachers to implement it.

One interviewee (“Beatriz”) stressed that without changes in the administrative structure to accommodate new content and methodology, teachers will resist making changes in their classroom practices: “their administrative burden is enormous, they lose heart to work on the curriculum” (“Jaime”). Without exception, all interviewees stressed the challenges teachers face in implementing the 2021 curriculum, for a wide variety of reasons. For example, the Ministry of Education asks all public school teachers to use the official textbooks published by the Ministry of Education and these textbooks were not modified for the 2021 curriculum. Consequently, teachers have been confused about how to use the textbooks and teach about contextualized sustainability using Project-Based Learning (PBL). Several interviewees (“Jaime,” “Beatriz”) mentioned the inordinate administrative responsibilities teachers have - turning in class plans (annual and weekly), recess supervisions, organizing celebrations and commemorations, attending to student behavior issues, communicating with parents, arranging physical classrooms, marking and reporting grades, substituting for other teachers, among many other related responsibilities that have remained unchanged.

Because most teachers follow the textbooks, and derive their plans and assessments from them, teachers perceive that the expectations from the new content and PBL methodology - planning, collaborating with others, planning interdisciplinary projects, taking frequent field trips, bringing experts into the classroom, fitting plans with the curriculum standards - add to their already saturated activities.

And also planning teaching strategies. On one hand, you need the knowledge, or at least a basic knowledge, and then you need to plan on how to engage students, and that takes time too, especially if you want to take them out of the classroom. Now that I do it a lot and I do it every week I see that it's not such a hard thing to take your kids out of the classroom but I have a lot of freedom that teachers don't have.... So, time. There is a lot of bureaucracy. And it's scary. Am I going to use my time to plan? And can I fulfill a certain standard or should I just stick to what I know and be able to do all the administrative work that I also need to? It's really hard. I know that there's a lot of teachers that do it but they're also exhausting themselves in the process.

(“Beatriz”)

A final related issue mentioned by interviewees is that many teachers are responsible for upwards of a dozen distinct classes, especially at the high-school level:

Also in the methodological guide there's a section which explains that the best thing to do is to go out with your students and live through these “escenarios vivenciales de aprendizaje” (authentic learning scenarios), that is for teachers to go out and identify the problems themselves and create the the driving question and the essential questions together, but in reality there's teachers that have 13 distinct classes, so how are they going to do that? (“Beatriz”)

Each class has a certain number of in-class hours that need to be taught and specific standards to be reached by students that will be assessed in state-run standardized exams. As a consequence, teachers feel exhausted by the multiple complexities in the educational system that do not allow adequate time to responsibly teach new content using innovative methodologies: “And then also the workload that the teachers have is huge” (“Beatriz”). One interviewee sees that teachers only use the curricula, both the 2016 and the 2021 versions, in order to fulfill their administrative responsibilities:

I have carried out research with teachers and they tell me that they plan using the curriculum, but only to fulfill their administrative obligations, to deliver the plans, not to implement them. In the classroom they plan using other materials. (“Jaime”)

Another interviewee wondered how useful the Curriculum Methodological Guide is for teachers when the Guide briefly outlines elements of Project-Based Learning without addressing teachers’ overwhelming administrative responsibilities: “They just used the same old structure and then they were like okay now make it into project-based learning, like go!” (“Beatriz”)

The textbooks used in Ecuador, from public and private publishers, interpret the 2016 curriculum and make it accessible to teachers without ever exposing them to the curriculum itself. By following the textbooks, several interviewees observed that a general problem in Ecuador is that teachers are unfamiliar with the national curriculum. For example,

I see the use of texts as an obstacle throughout the country. If they don't know the curriculum, they have no idea of its philosophical foundation and its theoretical framework. They teach the content only, they use the text exclusively, and not the curriculum. (“Jaime”)

No element of the 2021 innovation attempts to remedy teachers’ lack of knowledge about the provisions of the curriculum, including the standards. Teachers generally do not use the 2016 curriculum to plan, and a similar trend has already been observed for the 2021 version. As a consequence, teachers generally do not know how to plan with the curricula, either version: “teachers say they do not know how to plan based on the curriculum. They also do not offer training, so they go to the Internet to look for materials for their plans” (“Jaime”). One interviewee (“Beatriz”) wondered how teachers fulfill the expectations to connect the economic, social, and environmental aspects of sustainability issues for their students and then connect them with the appropriate curriculum standards.

Most interviewees (“Jaime,” “Jorge,” “Jose,” “Juan,” “Adriana,” “Beatriz”) mentioned that the 2021 curriculum lacks strong implementation tools at the classroom level, and an educational philosophy at the macro level. Among the multiple consequences of weak implementation tools is that teachers have expressed considerable confusion and discontent about the additional demands of the 2021 curriculum without alleviating pressure from their administrative responsibilities. Teachers weigh attempting innovations in their planning and teaching methods against fulfilling their administrative responsibilities. A further consequence voiced by an interviewee (“Jorge”) is that the conservation organizations that promoted creating the 2021 curriculum innovation assume that teachers are mostly implementing the curriculum as planned, and that any difficulty in carrying it out can be attributed to a steep initial learning curve related to its implementation. Educational leaders with more familiarity with the challenges teachers face lament the lack of implementation tools and instruments, making their job supporting teachers burdensome (“Juan,” “Beatriz”). One interviewee emphatically stated that the saving grace for Galapagos teachers is the teacher training and support provided through the Education for Sustainability in Galapagos Program (ESGP) that brings teachers closer to the curriculum and helps them navigate the new demands and tough decisions they have to make regarding how to prioritize their time:

So, teachers in Galapagos have a lot of support from the coaches in the program for teacher training. I can't even imagine what the teachers on the mainland are doing. Or they are probably just not doing project based learning. (“Beatriz”)

Conclusion

The origin story of the 2021 curriculum innovation and the two debates outlined above, how to innovate education in Galapagos and challenges regarding implementation, illustrate the epistemological nature of education innovation in general and specifically in Galapagos. At the heart of these debates is the expression in the curriculum that learning is

cognitive in nature. “What more should a Galapagos student know?” (“Carolina”). This animating question behind building a curriculum innovation for Galapagos, according to one interviewee (“Carolina”), compares Galapagos students to students on the Ecuadorian mainland. The question assumes that Galapagos students should know what students in the rest of the country know in addition to gaining specific knowledge about Galapagos. From this perspective, contextualizing curriculum means knowing about the local context. For example, one interviewee (“Jose”) expressed an aspiration for Galapagos students to be academically on par with students on the Ecuadorian mainland, and another lamented that the 2021 curriculum does not achieve making students more competitive with students from the Ecuadorian mainland and with international students:

Currently we continue to see a need to increase the educational academic standard at the primary, secondary and university levels because at the national level, the standard continues to be low and the level of competitiveness of Galapagueños students with their continental and even international counterparts is low. (“Adriana”)

This same interviewee (“Adriana”) perceived that levels of academic competitiveness are low for Galapagos students and had hoped that a curriculum innovation would strive towards greater competitiveness so that high-school graduates could thrive in mainland universities and return to the islands to professionally support their home communities: “Galapagos needs a new format, a new educational paradigm. Galapagos should be a space where generations of students are trained who can be competitive at all levels, locally, nationally, internationally” (“Adriana”). Within the current educational system, being competitive means knowing more, obtaining higher grades and doing better on standardized exams, all of which are cognitive-based. The current education system in Ecuador is content based, and the great majority of teachers use textbook-based plans and assessments. The 2021 curriculum innovation is at heart a modification of educational

content and all contextualized elements in the 2021 curriculum provide structure to the content.

One interviewee (“Beatriz”) lamented that the 2021 curriculum did not emphasize the need for all teachers and students to contribute to creating new knowledge and wisdom about Galapagos. Knowledge creation means going beyond knowing things about Galapagos and how it works, and demands that students develop capacities to ask tough and incisive questions, investigate, act, reflect, and try out their new knowledge in further action. Capacity building towards knowledge creation implies teacher and student creativity, establishes emotional connection, and understands and challenges imbalanced power structures through a critical, iterative action-reflection process. For this interviewee (“Beatriz”), creating new knowledge and wisdom for Galapagos is the true meaning of contextualized teaching and learning.

Ontology

Results that illustrate the ontological nature of the 2021 curriculum innovation are presented in narrative form that weaves together expressions of the selected codes in a non-linear format. The two subsections below, presented as debates happening in Galapagos about human interactions with the natural environment in Galapagos, illustrate the following codes: 3) ESD hinges on colonial interpretations of land; and 4) ESD is anthropocentric. Codes 1 (ESD gives credence to place over land), 2 (In ESD, place is considered an inert backdrop to the human drama), 5 (ESD objectifies elements outside of humanity), and 6 (In ESD, relationships with non-human elements are characterized by otherness) can be detected in the following narrative, but feature less prominently.

Conservation as an Expression of Anthropocentrism

Education curricula are essentially statements about being. At its most basic level creating or innovating curricula is an exploration of human nature, the nature of other entities and beings like minerals, plants, animals, geological and social systems, and the earth itself, and the relationships among all things. Instead of confronting ontological issues as such, primary and secondary curricula often address being and relationships more subtly by adopting language that expresses positionality. In like manner, interviewees did not address being and relationships directly, but their comments on other issues expressed ontological positionality.

For example, language that is anthropocentric expresses a specific relationship between human beings and the rest of creation. One interviewee (“Jaime”) spoke of the data gathered through the participative gatherings in creating the 2021 contextualized curriculum. Data indicated a perception by participants that the national and provincial governments value conservation - care of plants, animals, and their habitats - over people. People are not valued in the current conservation scheme:

Some of the data we collected says that they believe that for the government the most important thing is conservation, animals and plants, and not people. We are nothing. For this reason the people insisted more on social development, to give them identity and importance. (“Jaime”)

The role of people has long been debated in conservation on the Galapagos islands. To illustrate this point, people often point to the fact that 97% of the land in Galapagos is national park, where the public is only allowed when accompanied by certified professional guides on approved tours. The message received by the public from the Galapagos National Park through this policy is that conservation happens without the public. Scientists and

conservationists manage the park, but the public is not knowledgeable or trustworthy to respect delicate ecological relationships.

One interviewee (“Adriana”) indicated that since sustainability has become more prominent in popular discourse with the use of the 2021 curriculum, people often equate it with conservation in the sense that although they are distinct, they stem from the same mentality. In popular imagination they both seem like projects organized by certain groups in favor of the environment and are unrelated to the daily lives of people. Both seem to send a message of mistrust of the public in order to succeed. As alluded to above, a consequence of a message of mistrust and rejection of people in conservation has been a perception that people have no role in conservation and because conservation and conservation tourism receive generous funding, that it is more important than people and their needs.

Similarly, an interviewee (“Carolina”) stated that conservation is the key to all aspects of life in Galapagos: “We live directly from conservation and tourism. If we don't do conservation, the entire economy will fail” (“Carolina”). Interviewees lamented the lack of understanding among ordinary citizens that without conservation, no tourism is possible, or research, or even economic activity. Conservation is pivotal to Galapagos life, and people are not part of conservation: “People in Galapagos feel at a disadvantage because they don't have things from the continent, and they can't participate in conservation either” (“Jaime”).

Why Sustainability?

Another space where questions of being and relationships between people and the natural environment come into play is the debate interviewees cited among the population in Galapagos about the choice of sustainability as the philosophical foundation for the 2021 contextualized curriculum.

The majority of interviewees (“Jaime,” “Javier,” “Jorge,” “Jose,” “Beatriz,” “Carolina”) defended selecting sustainability, and therefore ESD, as the foundational philosophical framework for the 2021 contextualized curriculum innovation for Galapagos. For interviewees it seemed like the most logical choice for four specific reasons. First among them is the perception that ESD responds to the message coming from the United Nations that all development efforts should be framed within the Sustainable Development Goals (SDG’s). The SDG’s are the nucleus of a globally accepted framework about all key areas of human endeavor and about how communities should interact with each endeavor. Interviewees (“Jorge,” “Jose,” “Adriana”) found great comfort in knowing that Galapagos is contributing to the global goals set by the United Nations: “UNESCO calls for all curricula in the world to be based on sustainable development goals. Galapagos is part of this movement and this is a very good thing” (“Jorge”). A related reason mentioned by an interviewee is that the world in general is in a crisis characterized by a lack of sustainability, giving value to efforts made on Galapagos to make the world more sustainable: “we see in the world a crisis of colossal unsustainability at a global level.” (“Jose”)

Second, a sustainability discourse is already prominent on Galapagos.

The principle that moves the different strategies and that guides development in Galapagos is and has been in recent years the notion of sustainability, sustainable development, sustainable tourism, sustainable economy. It obeys the national and global trend of the Sustainable Development Goals that promote a transversal scope to all lines of human society and how communities have to necessarily interact in these different dimensions. (“Adriana”)

Conservation organizations on Galapagos as well as the Education for Sustainability in Galapagos Program (ESGP) speak of sustainability. The ESGP has regularly trained teachers since 2016 to work issues of sustainability into their lesson plans. One interviewee (“Jorge”) mentioned repeatedly that their work in a conservation organization aims at

fulfilling the SDG's. In general, many different stakeholders in the Galapagos community have already been thinking about sustainability: "in general you know, different stakeholders in the Galapagos community have been thinking for a long time about sustainability and how that framework can help preserve the Islands better" ("Beatriz").

Third, two interviewees ("Jose," "Beatriz") mentioned that education focused on sustainable development seems complete. They see it as an education for life that can be useful in Galapagos or anywhere else. The reason given for such a perception is that ESD strikes a healthy balance between the environmental, social, and economic aspects of life.

Finally, when asked about other possible philosophical frameworks for the 2021 curriculum, one interviewee stated that *Buen Vivir* and education for sustainable development are similar: "*Buen Vivir* and Education for Sustainable Development are similar. Why use another theory if they surely go hand in hand and are similar? Let's take advantage of something that is already in the scientific, political, etc. discourse" ("Carolina"). They reasoned that even though ESD is essentially the same as other educational philosophies, it is better to take advantage of a philosophy that is already familiar to people in different sectors than introduce something new.

However, half of the interviewees ("Jaime," "Juan," "Adriana," "Beatriz") questioned using ESD as the philosophical foundation for the 2021 curriculum. First, although putting conservation and education within the same philosophical framework seems convenient, two interviewees ("Juan," "Adriana") emphasized that neither sector has invested time into gaining a clear understanding of the concept of sustainability and each sector understands it differently. Sustainability for education is different from sustainability for development, or for conservation. The conservation sector may not take into account economic or social aspects of sustainability and thus see it from a different angle.

Second, as mentioned previously, people have equated the mentalities from which conservation and sustainability are derived, a perspective that has alienated many people in

Galapagos from both concepts. An interviewee suggested that people need identity as Galapagueños and a feeling of inclusion in the development plans for Galapagos: “the issue of identity is key in Galapagos. The people in the Galapagos, ordinary people, told us that they had no identity” (“Jaime”). Focusing the curriculum on sustainable development exacerbates these problems. Several interviewees (“Jaime,” “Jose,” “Juan,” “Beatriz”) preferred a curriculum with a stronger emphasis on social issues to strengthen their collective identity as Galapagueños and to empower people to participate in decisions about development plans for Galapagos.

Third, several interviewees (“Jorge,” “Juan”) appreciated the regular meetings through Acuerdo Galápagos por la Educación between conservation and education institutions, and working with a monthly theme seemed convenient. However, they also expressed frustration at being bound to only choose themes related to sustainability. They see opportunities to focus monthly projects on a variety of topics that are not always related to sustainability, according to the perceived needs of teachers and students:

The organization of essential monthly themes is similar to what other schools do on the Continent, since in this case they are linked to sustainability issues but at another time it could be about any topic, really. The topic is inconsequential, and it should be up to the teachers. For me, the important thing is that there is a schedule and that everything is ordered according to the calendar, as the essential issues in this case. It is a plus that they are linked to the theme of sustainability. But this strategy works perfectly fine without a new curriculum. The curriculum is not necessary. We can work with various essential themes, even not necessarily connected with sustainability. It makes matters worse that there is no clear definition of sustainability. And yes, I would like to reach a shared definition of sustainability in the locality, which is what we expected from the new curriculum. (“Juan”)

One topic mentioned by an interviewee (“Juan”), that goes beyond content and touches on methodology, is an orientation towards service to others, or a methodology called service-learning: “It seems to me that service learning is richer for sustainability issues. It gives much more to the proposal” (“Juan”). They suggested that service to others satisfies a variety of perspectives in a place that needs to validate diverse perspectives. They also suggested that service-learning allows people to connect to others emotionally and even acts as an existential grounding force. In this interviewee’s (“Juan”) experience, people in Galapagos yearn to share emotions, thoughts, feelings and to put the common good at the heart of their activities. Service-learning, for this interviewee (“Juan”), promotes the idea that all people are necessary in a development scheme and that all people in Galapagos can share a philosophy, time, space and a place in harmony. A unified vision of the need for all people in Galapagos to work towards the common good that includes plants, animals, people, and the land itself is not achieved by centering sustainability in education. The interviewee (“Juan”) stressed that sustainability, like conservation, is divisive, cold, and is an external force in which people are not embedded. Sustainability does not celebrate personhood in all of its dimensions, and the importance of sharing thoughts, emotions and feelings. Sustainability does not mention the common good.

Through service learning the relationship between the common person and public policy achieves new perspectives and this is what is needed. This is what we have been talking about today, you need to connect. On the other hand, it gives you this emotional connection, an existential complement, to not put it in spiritual terms. It is not a matter of religion. Let's talk about how we are people who exist in a space and we need to share emotions, thoughts, feelings. And from there, they begin to talk about the common good. I need the other, we can share a philosophy, a time, a space, a place in a harmonious way. This is what I aspire to. This is the main contribution that is missing from the new curriculum. (“Juan”)

A final element in the debate about centering sustainability is a concern about the nature of sustainable development. An interviewee expressed apprehension about the economic growth promoted in sustainable development models.

The concern that involves all of us is to continue the growth model, “sustainable growth”. Sustainable or unsustainable is still growth. I believe that Galapagos needs another approach, it necessarily has to change this paradigm because Galapagos does not support a growth model, period. We cannot talk about growth in Galapagos. We have to talk about a form of coexistence without growth because the system does not tolerate this. (“Adriana”)

Growth is not an option for Galapagos where hard boundaries separate the spaces designated for human development from the National Park.

Conclusion

Ontological expressions are prominent among Galapagos educators and conservation leaders. Interviewees in favor of the 2021 curriculum point to the SDG’s as a model of identity and relationships among all elements and beings. Interviewees asserted that the SDG model will bring success to students and will help them manage natural resources appropriately. Interviewees who question the foundations of the 2021 curriculum mentioned the need to overcome social differences characterized by those who have a say in development plans for Galapagos and those whose voices are marginalized. A growth model implied in sustainable development can only increase tensions among groups of people, and with the rest of nature. Interviewees also mentioned the need for an educational model in Galapagos that is characterized by service to others, sharing, achieving a common vision for Galapagos, and inclusion of diverse voices in development plans.

Critiques of ESD from the Land Education literature related to questions of being and existence permeate the perceptions expressed by the interviewees about conservation

efforts in the Galapagos Islands. The long-standing conservation scheme in Galapagos demands that people manage the natural environment from an anthropocentric perspective, that perhaps ironically, excludes the public. Public perception of conservation efforts is that of distinction, distance, detachment, and otherness because people are mistrusted in their handling of the natural environment, separating humanity from place. Conservation maintains land uninhabited, severing the relationship between people and the natural environment and giving credence to place over land. Interviewees, both in favor of and in opposition to the provisions of the 2021 curriculum, expressed a perception that conservation is largely equivalent to sustainability, and therefore setting sustainability at the heart of the 2021 curriculum lends credence to the conservation scheme.

Axiology

Results of the revision of the interview transcripts related to value systems are presented in narrative form and center on the debate among education and conservation leaders in Galapagos about the need for a philosophical foundation for the 2021 curriculum innovation. The narrative presents the selected codes for the category of axiology in a non-linear format that resists using codes as subsection titles. The debate outlined below illustrates codes 1 (In ESD, present settler stability is presumed); and 2 (ESD empowers students to move within current power structures). No interviewee expressed concern regarding a lack of spirituality, or the materialist quality of the 2021 curriculum, and therefore code 3 (ESD validates a materialist worldview) does not feature among the following results.

Introduction

Values systems are inherent in all curricula, and creating or innovating curricula is an exercise in determining what values to convey to teachers and students. Several of the debates taking place among educators and conservationists in Galapagos outlined

previously can also be seen as axiological in nature. Aligning educational and development plans in Galapagos with the SDG's is an axiological move because it accepts the values expressed through the SDG's. A critical lens may be necessary to perceive some of the values inherent in the SDG's. Land educators, for example, point out that working within established structures like the SDG's as an educational framework spurs students to move within current power structures that often represent colonialist perspectives. A second example can be seen when interviewees justify using ESD because environmental and social degradation are problems faced all over the world as valuing universal truths that disregard the need for specific people, places, and land. Further, putting conservation at the center of all social and economic activity on Galapagos and making sure that education is useful economically in students' futures validate a materialist worldview.

However, the central debate among educators and conservationists in Galapagos that expresses axiological concerns revolves around the need for a philosophical foundation for the 2021 contextualized curriculum innovation.

The Need for a Philosophical Foundation for a Curriculum

It was established earlier in this dissertation that a generalized lack of knowledge about the national curriculum among teachers has existed since its establishment in 2016. Reliance on official textbooks has given teachers a convenient alternative to understanding the provisions of the national curriculum and learning how to effectively implement it. Lack of knowledge about the curriculum implies ignorance of its philosophical foundations.

Some background information about the 2016 national curriculum will provide context to the debate about the need for a philosophical foundation for the 2021 innovation. The key design elements of the 2016 national curriculum are that it is national scope with a view towards integration into a globalized world, it values celebrating human diversity, and its intended applicability and relevance to students' local circumstances. Applicability to local

circumstances, often referred to as Contextualized Teaching and Learning (CTL), is far and away the most prominent design element in the Ecuadorian national curriculum as the standards or skills that form the backbone of the curriculum are meant to be carried out locally (Ministerio de Educación del Ecuador, 2016). The curriculum aims to help students interpret their national identity in their local circumstances as active and responsible citizens.

Although the Ecuadorian national curriculum is national in scope, it is designed to be complimented by schools and teachers according to local and provincial cultural specificities. Contextualizing the curriculum means placing importance on "daily life and the resources of the nearby environment as an instrument to relate the experience of students with school learning" (Ministerio de Educación del Ecuador, 2016, p. 13). Towards this purpose, students should be aware of issues that affect all people in a globalized world: health, poverty, resource depletion, overpopulation, pollution, racism, emigration, climate change, and violence, but analysis of these issues should start from the effects of these phenomena on the local context for the student (Ministerio de Educación del Ecuador, 2016).

The Ecuadorian national curriculum addresses the objective of bringing educational content and practice closer to the interests and needs of the students (Ministerio de Educación del Ecuador, 2016, p. 10). Teachers and students are encouraged to explore their immediate reality together to increase their capacity to apply new knowledge in their daily lives. Teachers are tasked with designing motivating activities that are relevant to problems students face in their localities while students should take on these problems in collaborative teams using interdisciplinary knowledge (Ministerio de Educación del Ecuador, 2016). Schools are afforded "pedagogical and organizational autonomy for the development and concretion of the curriculum, the adaptation to the needs of the students and the specific characteristics of their social and cultural context" (Ministerio de Educación del Ecuador, 2016, p. 15).

Contextualized Teaching and Learning (CLT), or contextualization, may be seen as a poor substitute for a robust philosophical foundation of a curriculum. Emphasis on contextualization represents a degree of conceptualization that makes indirect references to broadly accepted philosophies like Place-Based Education and ESD. The fact remains that the 2021 curriculum innovation references ESD without providing conceptualization or connecting ESD to the contextualization framework of the 2016 curriculum. The text of the 2021 curriculum seems to assume that users will make the connections between the philosophical positions of both curricula. Two interviewees (“Juan,” “Adriana”) shared that from their perspective, the conceptual framework of a curriculum is the most important instrument and that at some point educational and conservation leaders in Galapagos need to discuss it:

For me the most necessary instrument is the theoretical framework of education for sustainability. At some point we have to reflect on this. And I don't think it's too late. ... In thinking philosophically about education for sustainability, which is obviously needed, it is important to stop everything and do it. ... We are going to the point that of all the tools that are necessary for the implementation, the most important is the theoretical framework. That is where sustainability is, the main authors, what different perspectives are there in today's world, what concepts and values do they transmit? This discussion has not taken place in Galapagos. (“Juan”)

Several interviewees (“Juan,” “Adriana,” “Beatriz”) pointed to a more poignant reality, that for a place like Galapagos that prides itself on principles like conservation and sustainability, science, research, and development, little deep discussion of principles takes place. The high esteem in which conservation and sustainability are held in Galapagos does not necessarily imply that their practice and purpose are well understood. Their deeper meaning, too, is surrounded by misconception. For instance, The concept of sustainability is explored in some of the literature of the Galapagos National Park, for example, when terms

like 'resources' are used to refer to energy, soil, and water, and 'ecosystems services' refer to benefits humans can derive from nature. Use of terms in the Galapagos National Park literature from the language of development, however, does not imply general understanding of the concepts of development and sustainability among Park staff, or any other conservation organization, let alone among the general population of the islands.

Several interviewees ("Jaime," "Juan," "Adriana," "Beatriz") observed that the concept of sustainability has not been discussed among educators or conservationists in Galapagos with the intention of arriving at a common understanding. One interviewee ("Adriana") indicated that the various uses of sustainability by different organizations and groups is a result of distinct conceptual interpretations. Each organization or group uses the term sustainability to fit its own lines of thought and action. For example, a sustainable economy and sustainable tourism differ in principle, as does institutional sustainability. Sustainable research agendas speak of setting research priorities to maintain interventions, training, logistics, methods, funding, field work, and publishing over time.

This is our vision of sustainability, which is not necessarily sustainability for life in Galapagos, for growth and the economy in Galapagos. If we are working in the fishing sector, for example, and we talk about the sustainability of fishing, obviously we are going to have to talk about economic sustainability of the fishing sector with all the additional elements of the value chain of the fishing phases: pre-capture, capture, post-capture, and how the sustainability of this sector in these three lines is or is not more or less beneficial to keep the sector that way. Institutionally speaking, the sustainability of [our organization] and what we do is approached in a way that may not coincide with the way it is talked about in the curriculum. ("Adriana")

Each sector sees sustainability from a distinct lens and several interviewees ("Beatriz," "Adriana," "Juan," "Jaime") labeled this situation a concept vacuum, leaving little possibility for agreement on a definition for sustainability.

It may come as little surprise then that there is no clear agreement about the concept of sustainability, or sustainable development, among educators in Galapagos. According to all interviewees, central concepts of a curriculum innovation based on ESD were briefly and narrowly discussed and no relevant conceptualization was published with the 2021 curriculum innovation as was the expectation of several interviewees (“Jaime,” “Juan,” “Adriana,” “Beatriz”). Several interviewees (“Jose,” “Beatriz,” “Jaime”) expressed a desire to arrive at a common definition of concepts central to ESD among educators and conservationists. They expressed a need to correct an overemphasis on environmental sustainability and give more attention to social sustainability, for example.

A couple of interviewees (“Juan,” “Beatriz”) expressed one specific concern about a lack of conceptual clarity among educators regarding the 2021 curriculum. A philosophical framework defines expectations for teachers and allows them to make decisions that are coherent with expectations created in the 2021 curriculum innovation. Without philosophical grounding, each school administrator and teacher does what he or she thinks is best, or what he or she thinks is expected of him or her. These same interviewees (“Juan,” “Beatriz”) mentioned that it is challenging to guide teachers without referring to some theory. Consequently, these interviewees said, administrators and teachers make decisions based on their own interpretation of the 2021 curriculum, and they are often inconsistent with decisions made by other administrators and teachers:

By not having this philosophical theoretical framework as a basis for the curriculum, referring to education for sustainable development as such, I am not talking about the essential theme of the project, because they are two different things, I am talking about the pedagogical part, the theme of education for sustainability, defined, means that at times some teachers make decisions that are not consistent with what is being asked of them. So the question is: what is being asked of them? It is up in the air. It does not connect. (“Juan”)

Administrators and teachers do not have clarity regarding expectations and their understanding and actions vary inordinately. Conceptual clarity about the value systems transmitted through the curriculum could bring teachers together in thought and action and provide a useful tool for teacher trainers.

Conclusion

For Land educators, the Sustainable Development Goals and their key educational strategy, Education for Sustainable Development, represent dominant power structures that presume settler stability. Featuring ESD in the 2021 curriculum innovation upholds for Galapagos globally dominant power structures and settler stability. Omission of efforts to educate the public, school administrators, teachers, students, parents, or even conservation and education leaders, about the provisions of ESD, illustrates, on behalf of the Ministry of Education, trust in and acceptance of a partially examined sustainability discourse and its benefits for Galapagos.

Historicity

Although interviewees generally recognized that the residents of Galapagos lack clarity about the natural and human history of the archipelago, none suggested that the way history is taught requires change. Nor did acknowledging that the 2021 curriculum innovation treats the history of the Galapagos Islands superficially translate to a concern about how history is taught. In fact, nearly all interviewees gave examples of the efforts teachers make to teach Galapagos history. The only historicity-related code that was explicitly addressed by interviewees was number 5, that ESD places much more emphasis on the present and future status of a place than its history. The other codes that broadly refer to historical whitewashing and its consequences as well as fact-based methodologies, represent perspectives that seem outside of interviewees' acquaintance. The following

results are therefore presented in a succinct and narrative format to illustrate the general lack of engagement with the application of historicity to the 2021 curriculum innovation.

How history is viewed and taught indicates the worldviews of curriculum developers and educators. As mentioned previously, the 2016 national curriculum and the 2021 curriculum innovation for Galapagos briefly mention the history of the Galapagos islands, in the context of a biographical sketch of Charles Darwin, to explore the evolution of species. Two further mentions are made of the natural history of Galapagos, and no other mention of the human history of Galapagos is made. A case was made earlier in this document that the history of the Galapagos islands, both natural and human, is long and rich. Four centuries of extensive animal exploitation, introduced species, and plant destruction until the creation of the Galapagos National Park in 1959 have significant consequences on modern social, economic, and environmental conditions in Galapagos. Colonial practices up until modern times also have important impacts on current social conditions in Galapagos.

In the interviews, education and conservation leaders in Galapagos expressed concern about the unsustainable world they inhabit, but showed no interest in how it became unsustainable. Despite the absence of the history of Galapagos in the curriculum, all interviewees enthusiastically recounted attempts by teachers to teach certain aspects of the history of the islands. One (“Beatriz”) mentioned how teachers put together a lesson about how Ecuador annexed the Galapagos islands, subsequent colonial practices on the four inhabited islands, and their political consequences. Another interviewee (“Jose”) mentioned a lesson other teachers planned exploring how groups of Ecuadorians migrated to the islands and the confusing identity of current Galapagos residents. Lessons like these are a result of teacher initiatives, and are not part of the curriculum. Historically political and migration issues are indicative of a common perception, what one interviewee (“Jose”) characterized as a short history of the Galapagos islands. This interviewee mentioned that

there is no ancestral knowledge in Galapagos, no pre-Columbian human presence like on other Pacific islands, and that Galapagos has no more than a few decades of history.

Here there is no ancestral knowledge and there is no human presence as in other places, the history is dozens of years and nothing more. We cannot talk about ancestral knowledge, but we can talk about interculturality and colonization. (“Jose”)

One interviewee (“Jose”) did not see the lack of history in the 2016 and 2021 curricula as a problem because, according to them, teachers have to teach history to give context to other topics that are in the curricula. This interviewee (“Jose”) is confident that teachers are teaching the history of Galapagos, natural and human, because it is logical to do so, not because there is any evidence that it happens: “So perhaps it is not described in the curriculum, but you must go through these topics” (“Jose”). Consistent with ESD philosophy, interviewees (“Javier,” “Jorge,” “Jose,” “Carolina”) exhibited much more concern for the present and future than for the past. These same Interviewees emphasized that Galapagos students need to be prepared to live in a world that is more unsustainable each day. At the same time, they lamented the fact that many residents of Galapagos are unfamiliar with the natural and human history of Galapagos and do not see how history impacts current issues faced by Galapagos residents. Their lamentation, however, referred to a perfunctory, laudatory, and uncritical treatment of the history of the Galapagos islands, as no effort is made in the 2021 curriculum to take a critical look at the exploitative history of Galapagos and connect it to current conditions and issues. No interviewee saw the need to do so.

Conclusion

The origins of the debates among education and conservation leaders in Galapagos described in this section are not always clear. Some may be in response to the 2021 contextualized curriculum innovation for Galapagos and some may be continuations of older

debates among educators in Galapagos. Much clearer is the fact that for many, the 2021 curriculum did not answer aspirations for an appropriate, relevant, academically strong education in Galapagos as proponents purport. According to the authors of the 2021 curriculum, the Ministry of Education rejected attempts to deeply contextualize the curriculum in response to the data collected through the literature review and the leader gatherings, and the result was that the published version of the curriculum “represents approximately 2% of our original work” (“Jaime”). The published version of the 2021 curriculum, they claim, proclaims the provisions of ESD, but it does not uphold them. Proponents of the 2021 curriculum recognize that this first iteration is flawed and look forward to an evaluation to be carried out in 2023 to make modifications. However, they do not anticipate making deep changes as a result of the evaluation because they perceive that in general the curriculum fulfills its purpose. It is unlikely that any evaluation of the 2021 curriculum will provide a space to publicly discuss the debates described in this section, or explore epistemological, ontological, axiological matters, or issues related to historicity, unless the evaluation is truly open to all voices and open to deep changes.

Chapter 5: Discussion

Research Questions

The Galapagos Islands are defined by the conservation achievements that stem from the creation of the Galapagos National Park in 1959. Through the Education for Sustainability in Galapagos Program (ESGP) and a contextualized curriculum innovation (2021), education in Galapagos has formally aligned with conservation discourse and activities. The 2021 contextualized curriculum innovation for Galapagos contains the 2016 Ecuadorian national curriculum. The 2021 curriculum adds a few standards to the 2016 curriculum, adds Education for Sustainable Development (ESD) to Contextualized Teaching and Learning (CTL) as its philosophical foundation, and encourages project-based learning as an appropriate methodological strategy for its implementation. The central research question of this study aims to identify the philosophical implications of implementing a partially examined educational framework for a curriculum innovation in the Galapagos islands. The sub questions seek to uncover the implications of the educational philosophies in the 2016 and 2021 curricula.

The central research question for this study is: **What are the epistemological, ontological, axiological, and historicity-related implications of using a partially examined Education for Sustainable Development framework for curriculum innovation in the Galapagos Islands?**

The subordinate research questions for this study are: a) In what ways do the philosophies of conservation organizations, education administrators and educators, with respect to this curriculum, reflect similar or divergent philosophies? b) How and in what ways does the curriculum reflect Western-centered concepts of sustainable development?

Summary of Key Findings

The codes gleaned from, and responding to the critiques of ESD contained in the Land Education literature were organized into four natural themes: epistemology, ontology, axiology and historicity as these are the central questions to an Indigenous worldview that are addressed from a settler colonial perspective in ESD. The data from a critical discourse analysis of the 2021 contextualized curriculum and of interview transcripts of conservation and educational leaders in Galapagos suggest evidence that confirms validity of the critiques leveled against ESD in the Land Education literature.

Specifically, the 2021 curriculum and the interview transcripts identified a content-driven curriculum characterized by the objectification of knowledge and learning as transactional, instrumental, cognitive in nature and largely abstract. The curriculum and the interview transcripts also employed language that identified place as a meaningless backdrop to human drama and other expressions of relationships among humans and all other living and non-living elements, including the earth itself, as objectified, commodified, and characterized by distance and otherness. The data further indicate validation of current power structures, settler stability and a materialist worldview. Finally, data suggest a view of history and teaching history of the Galapagos Islands characterized by a fact-based approach that ignores, hides, and denies legacies of prejudice, racism, discrimination, exploitation, oppression, sexism and conflict. Such an approach to history is consistent with a central tenet of ESD that prioritizes the present and future of a place over its past.

Data gathered from the interviews presented the findings summarized above in the context of debates among education and conservation leaders in Galapagos that reflect differences in epistemology, ontology, axiology and historicity consistent with the differences between Land Education and ESD. Debates include how to innovate education in Galapagos, how to implement the 2021 contextualized curriculum innovation, why

sustainability was chosen as the philosophical foundation for the 2021 contextualized curriculum, and the need for a philosophical foundation for a curriculum.

Finally, the documentation containing the 2021 curriculum - an introduction, curriculum standards and a methodological guide - reflect characteristics of a weakly understood and diluted ESD-inspired curriculum. Examples include orthodox assessment and grading schemes, demanding administrative arrangements, and rigid subject area structures that undermine ESD as described in the ESD literature. Further, interviewees representing conservation and educational leadership in Galapagos expressed two divergent perspectives, one that celebrates the ESD-inspired 2021 curriculum and the other that expresses concerns about philosophical and practical characteristics of the ESD curriculum.

Answers to the Research Questions

Central research question: What are the epistemological, ontological, axiological, and historicity-related implications of using a partially examined Education for Sustainable Development framework for curriculum innovation in the Galapagos Islands?

Regarding the central research question, both the revision of the published texts that contain the 2021 curriculum innovation for Galapagos and the interview transcripts indicate that the chosen educational philosophy for the 2021 curriculum, Education for Sustainable Development (ESD), was largely unexamined by all stakeholders. The authors enlisted to create the 2021 curriculum are the exception as they produced a thorough literature review of ESD which informed their original proposal for the new curriculum to the Ministry of Education. Rejected by the Ministry of Education because of the structural and administrative changes implied by the proposal, the authors never socialized their literature

review, or any derivative of it, for the other stakeholders. The final published version of the 2021 curriculum contains key characteristics of ESD, mostly practical in nature, such as giving priority to establishing meaningful and ethical relationships between students and the places where they live, an emphasis on reading the world to promote justice for marginalized groups, for animals, and for the earth itself, among many others. However, as the authors of the 2021 curriculum contend, the published curriculum represents a diluted expression of ESD, contorted to fit the pre-existing curriculum structure of the 2016 National Curriculum: the 2021 innovation maintained “the essence and structure of the subject areas, curricular blocks, evaluation criteria and indicators from the 2016 national curriculum” (Ministerio de Educación del Ecuador, 2021b, p. 9).

Although ESD is diluted and contorted in the 2021 curriculum innovation for the Galapagos Islands, expressions of the philosophical foundations of ESD shine through clearly. Findings in this study provide evidence that critiques of Place-Based Education, and therefore ESD, found in the Land Education literature comprehensively apply to the 2021 curriculum innovation.

Implications of the nature of the 2021 curriculum innovation can be seen for education in Galapagos as well as for education on other islands.

Implications of the Results for Education in the Galapagos Islands

The consequences of implementing a partially examined educational philosophy in a curriculum innovation cited in this research will continue unresolved into the future. The debates among educators and conservationists about the nature of education in Galapagos and how to implement change; the lack of clarity among all stakeholders around key concepts like sustainability and development; misunderstandings and often erroneous assumptions among school teachers regarding expectations for them and their role, their responsibilities, their pedagogy, and their relationship with content; frustrations about

achieving balance between innovations in the classroom and administrative responsibilities, will continue until the misperceptions around ESD are clarified for all stakeholders, and an alternative educational philosophy is sought. It is my hope that this study may contribute to such a clarification and search.

However, perhaps the heart of the matter lies in how ESD fits with the future of the Galapagos Islands. I cannot claim to know the vision that the people of Galapagos have for the future development of their islands. However, from my vantage point as a former school administrator there, and as a researcher into the current state of education there, I suggest that the 2021 curriculum is not a good fit for Galapagos. Even if the 2021 curriculum were reformed to express a robust form of ESD, it would not be a good fit for Galapagos.

Any educational philosophy that affirms a subject - object relationship between humanity and the natural world, that depicts places as “human-shaped objects” that “reifies settler colonial relationship to knowledge and power” (Bang, 2014, p. 44), that excludes Indigenous worldviews by affirming settler colonialism, that affirms a materialist paradigm, and that erases the oppression of Indigenous people from history and therefore excludes Indigenous people from the present and future shaping of a place, seems incompatible with the spiritually-minded, caring, change-oriented, forward-thinking, and diversity-minded people of the Galapagos Islands.

Choosing an educational philosophy must begin with a vision exercise for education in the Galapagos Islands. With a vision for Galapagos in hand, leaders could look for an educational philosophy that can express that vision. Land Education may not be a viable option because the Land Education literature focuses on critiquing Place-Based Education rather than fleshing out practical elements implied in its philosophical underpinnings. But the philosophical elements of Land Education - its epistemology, ontology, axiology and view of history - are solid starting points. Nor do I recommend a hybrid between ESD and Indigenous education as they are incompatible.

Implications of the Results for Education on Other Islands

There are a number of lessons to be learned about educational innovation in this study, especially for islands. People on islands live in closer contact with their place as changes in the environment are readily visible and impactful on people's lives. Territories and governments are for the most part smaller and more manageable, so there is greater control over local education than in mainland nations which creates opportunities for educational change. Further, islands are often more vulnerable to changes that result from global forces, like population pressures, sea level rise, strengthening hurricanes, or increasingly invigorated El Niño events. As Selby and Kagawa (2018) attest, ESD, and related educational strategies, are often attractive to island populations as they respond to immediate concerns for the health of the people and their environment.

An implication of the results of this study is that education innovation requires a thoughtful process. The debates about education occurring in Galapagos described in the results of this study can be instructive for other islands. The need for a philosophical framework may be a logical place to start. The debate about a philosophical framework among education and conservation leaders in Galapagos revolves around the implications and impact of committing to a specific educational philosophy for formal education. For example, some implications are that the philosophy will define all aspects of the educational project from top to bottom including content and pedagogy, that all people need to have access to understand the philosophy, and that the philosophy carries a worldview within it. The worldview of the selected educational philosophy should be scrutinized for its epistemology, ontology, axiology and its view of history, all of which needs to be disclosed, illustrated, and interpreted publicly. Understanding of the selected educational philosophy will evolve over time. The philosophy should correspond to long-term, deeper goals of the

island's inhabitants. This study also suggests that educational philosophies should “meaningfully engage colonial legacies in education and particularly how conceptions of place have been involved in their continuance” (Calderón, 2014, p. 25). Results from this study further indicate that not expressing an educational philosophy in a curriculum is an action that carries a hidden worldview within it, making it preferable to agree on one, express it publicly, and commit to it.

How to innovate education may be a logical place to continue the process of educational innovation. The related debate among education and conservation leaders in Galapagos revolves around whether to take a “top-down” strategy by reforming the curriculum, or a “bottom-up” approach by working with teachers to reframe their methodology. These options do not need to be framed dichotomously as they can co-exist and even work synergistically. A clear educational philosophy can work from both ends simultaneously, or a more gradual path can be chosen in which case a bottom-up approach may achieve greater acceptance among teachers than the top-down approach in Galapagos.

The last debate in Galapagos that can be useful for reformers on other islands regards implementation. Results from this study indicate the value of achieving coherence among all of the system components - textbooks, teacher administrative responsibilities, content, pedagogy, professional development, and assessment. Beyond these basic elements, there are others that cannot be overlooked like expectations regarding breadth and depth of the content and pedagogy. As an example, a study by Goodale (2020) about curricular adoption in a sustainability focused professional development (PD) program concluded that “teacher PD should consider focusing on the ‘depth’ of some mission-specific concepts compared with presenting a breadth of curricula that spans many disciplines” (p. 17). Another example revolves around Sleeter and Stillman’s (2005) scheme for classifying and framing curricula using Bernstein’s (1975) theory of codes of power. In the scheme,

curricula are classified as classification, or “the degree to which curriculum contents are separated and bounded” (Sleeter & Stillman, 2005, p. 28). The second criteria is frame, or the amount of control teachers and students have over the “selection, organization, pacing and timing of the knowledge transmitted and received in the pedagogical relationship” (Bernstein, 1975, p. 89). As a case in point, data from this study indicate that for the 2021 curriculum, the Ecuadorian Ministry of Education decided to maintain the classification level from the 2016 curriculum, but give teachers and students more “frame”, or decision-making power over what and how to teach. Not only did this create an imbalance between classification and frame, but the Ministry of Education failed to commit to the move by not bringing other administrative elements like textbooks, and teacher administrative responsibilities in line with this decision.

Subquestion 1: In what ways do the philosophies of conservation organizations, education administrators and educators, with respect to this curriculum, reflect similar or divergent philosophies?

Data gleaned from the interviews indicate ongoing debates among conservation and education leaders about education in Galapagos of epistemological, ontological, and axiological nature, that reflect divergent perspectives. While many champion the ESD curriculum, others question nearly every aspect of the curriculum project. Specifically, divergent views were found regarding choosing sustainability as a fundamental principle for education, how the 2021 curriculum should be implemented, how to innovate education in Galapagos and the lack of a clear philosophical foundation for the curriculum.

Subquestion 2: How and in what ways does the 2021 curriculum reflect Western-centered concepts of sustainable development?

Evidence of how ESD reflects Western-centered concepts of sustainable development has been provided throughout this document, regarding the System of Environmental-Economic Accounting - Ecosystem Accounting (SEEA-EA) accounting

scheme, how ESD promotes economic growth as foundational to development, how Selby and Kagawa (2018) are critical of the Western-centered epistemology and outlook in ESD, from the Land Education literature that critiques how Western scientific thought is built upon the separation of nature and culture, and how Western science models exclude the conception that all things are animate. Choosing Land Education as the lens through which to critique ESD provided a non-Western perspective to give contrast to the globally accepted ESD platform that is embedded in the SDG's, in Agenda 2030, in the United Nations and more generally in the global economic and development models. Land Education refutes core Western-centered ideals regarding epistemology, ontology, axiology and an historical perspective. The research codes themselves are directed critiques of ESD from the Land Education literature. Data gathered from the 2021 curriculum and in the interview transcripts suggest that the critiques are justified. In other words, data indicate that the 2021 curriculum and in the interview transcripts reflect Western-centered concepts of sustainable development.

Significance of the Results

The results of this study have significance for the field of education, especially related to the global efforts to implement sustainable development through education. The Sustainable Development Goals of the United Nations frame and drive the development discourse globally, and UNESCO situates ESD as a “key enabler of all SDG's” (UNESCO, 2017). Through the Global Action Programme, 26 million learners were exposed to ESD curricula and special projects, and 2 million educators received training in its provisions (United Nations, 2020).

This study rectifies certain misperceptions of ESD and Indigenous education. First, Selby and Kagawa (2018) document educational projects that incorporate ESD and

Indigenous worldviews because of perceived compatibility. Selby and Kagawa (2018) indicate how ESD and Indigenous education have experienced a recent revival on many islands, which has coincided with the emergence of ESD-inspired projects, leading the authors to affirm their compatibility. Also, the Vanuatu Ministry of Education published a curriculum statement which conflates ESD with Indigenous education (Selby & Kagawa, 2018). Although Selby and Kagawa critique the "Western epistemology and value systems" (Selby & Kagawa, 2018, p. 143) of ESD, they deem the fusion of ESD-based approaches with Indigenous worldviews as appropriate for island settings.

However, this study suggests evidence for Land educators' assertion that ESD, along with ESD-adjacent educational philosophies and strategies (Place-Based Education, environmental education, climate change, and disaster risk education, etc.), is fundamentally incompatible with Land Education. Selby and Kagawa (2018) perceive the superficial use of Indigenous epistemologies in educational projects that conflate Indigenous and Western worldviews. The essential concept that may be misunderstood in projects that conflate the two worldviews is Land and its distinction from place. Land is people and place, it is material and spiritual, it is content and pedagogy (Paperson, 2014; Simpson, 2014). Philosophically, the subject - object relationship between humanity and the natural world depicts places as "human-shaped objects" that "reifies settler colonial relationship to knowledge and power" (Bang, 2014, p. 44). Indigenous worldviews cannot coexist with settler colonialism. Pedagogically, even the "action-oriented transformative pedagogy that engages learners in participative, systemic, creative and innovative thinking and acting" (Leicht & Byun, 2018, p. 56) associated with ESD, fails to establish and nurture subject - subject relationships with "... all aspects of creation: landforms, elements, plants, animals, spirits, sounds, thoughts, feelings, energies and all of the emergent systems, ecologies and networks that connect these elements" (Simpson, 2014, p. 15). Finally, erasing or neglecting

the history of struggle, discrimination, exploitation and conflict as ESD does in favor of focusing on improving the present and future exemplifies historical whitewashing.

A second misperception this study aims to correct is that some educators see Indigenous perspectives as equivalent to ESD. One interviewee (“Carolina”) in this study saw no reason to use *Buen Vivir* as a philosophical foundation for education in Galapagos because, from their perspective, it is essentially the same as ESD, and they reasoned that because people are already familiar with the concepts and terminology in ESD, it is more convenient to use ESD. Another example appears in a study about bilingual, intercultural education in Galapagos. Román et al. (2022) suggest that sustainability and conservation have been natural components of the traditional ecological knowledge (TEK) from the Salasaka Indigenous people of Ecuador: “That is, the importance of sustainability and conservation of nature is part of their TEK, and moving to Galapagos only meant adapting it to the ecosystems of this region” (p. 11).

Caring for people and the land through TEK could be construed as sustainable and as a form of conservation, but not using the terms as they are employed in the development literature, and not as they are practiced on the Galapagos Islands. Land Education labels sustainability and conservation as exploitative practices that reify Western-centered worldviews. Sustainability and conservation imply the disruption of Indigenous relationships to land and the removal of Indigenous people from their land, characterized by Tuck and Yang (2012) as a “profound epistemic, ontological, cosmological violence” (p. 5) and by Solis (2017) as “dismemberment” (p. 200) because their bodies can no longer tell their stories or carry out traditional Native educational practices.

A third and related misperception this study aims to dispel relates to the perceived wholesomeness of ESD practices. In the face of profound impacts of climate change, habitat destruction, massive losses of biodiversity, social and economic exploitation, and consumerism, the tenets of sustainability appear as the logical antidote and are therefore

promoted in education. For example, in today's global political climate, it is difficult to argue against target 4.7 of the SDG's:

By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development. (United Nations, 2022a)

It is unorthodox to dispute the value of connecting development in Galapagos with the dominant global development discourse, the value of students knowing more about Galapagos, conserving valuable land, forging one's desired future, establishing meaningful and ethical relationships between students and the places where they live, education that is useful economically in students' futures, students acquiring essential knowledge, giving rights to nature, establishing a balance between humanity and nature, and between producing and consuming, reducing one's carbon footprint, boosting economic growth, and recognizing that all the inhabitants of the world are linked through the respect and promotion of universal human rights. On their face, these elements appear benevolent as their presence is better than their absence or their opposite. It is not the intent of this study to criticize these actions or the people and institutions that promote them.

Nevertheless, reviewing the concepts of education, sustainability, and development from an Indigenous worldview through the Land Education literature provides a perspective that challenges conventional wisdom. Results from this study suggest that a settler colonial framework described in the literature review of this study, poisons even the most apparently beneficial goals. Sustainable lifestyles become an expression of materialism. Defining knowledge that children should acquire becomes manipulative. Reducing one's carbon

footprint becomes greenwashing. Human rights become the dissolution of humanity. The rights of nature become an adversarial jockeying for position between the State and Indigenous groups. Establishing a balance between humanity and nature becomes an ontological separation of truly unified entities. Economic growth becomes social inequity and environmental degradation. Forging one's desired future becomes erasing inconvenient history. Establishing meaningful relationships to one's place becomes an acceptance of the unjust forces that shaped it. All principles, even the most benevolent among them, take on destructive identities when embedded in settler colonialism.

Results of this study, in alignment with the literature review, reveal that despite its pro-change rhetoric, ESD affirms current power structures because settler stability is presumed. The multiple crises that ESD proposes to resolve are a consequence of the many expressions of settler colonialism, a worldview that spawned ESD. An example of such deceitful methods from the 2021 curriculum is its critique of the anthropocentric relationship between human beings and nature. However, evidence cannot be found where the 2021 curriculum attempts to assist teachers and students to understand, analyze, or seek alternatives to anthropocentrism.

Another example from the 2021 curriculum is how Indigenous people and culture are presented as models to be emulated, regarding their traditional knowledge, forms of life, social organization, and capacity for innovation and creativity. Yet none of these traits are explored in the curriculum. Additionally, the record of oppression of Indigenous people in Ecuador is taught as facts of bygone history, and not as a catalyst for rethinking the ongoing systems that justified and continue to justify the oppression. With the exception of Charles Darwin's visit, no human history of the Galapagos is mentioned in the 2021 curriculum. Nor does the 2021 curriculum mention Indigenous people in modern Galapagos. The message that comes across to the reader of the 2021 curriculum is that the history of Indigenous people in Ecuador is lamentable, but now they have been successfully assimilated. One

may ask, then, what is the model provided by Indigenous people to be emulated? As a consequence, the victimized groups of settler colonial scenarios are “forced to forgive and forget, they are forced-fed with convenient versions of the past and an equally comfortable way into the future” (Solis, 2017, p. 201). Examples such as these from the 2021 curriculum lend credence to Kopnina and Meijers’ (2013) critique that ESD risks indoctrinating students about progress, modernity and development as articulated by agencies that claim expertise in these topics.

Chapter 6: Conclusion

This study examined Education for Sustainable Development (ESD) as the philosophical underpinning of the 2021 contextualized curriculum innovation for the Galapagos Islands. Land Education was used as the non-Western lens to carry out a Critical Discourse Analysis using Directed Content Analysis. The analyzed texts were official, published documentation of the 2021 contextualized curriculum innovation, which contains the 2016 national curriculum, and transcripts of interviews of education and conservation leaders in Galapagos who represented organizations that participated in developing the 2021 curriculum. Codes for the qualitative data analysis were gleaned from the Land Education literature that critique Education for Sustainable Development, which were then organized into natural categories: epistemology, ontology, axiology, and historicity.

Data from this study suggest that education and conservation leaders in Galapagos are divided between those who bolster the ESD-promoted discourse and therefore the 2021 curriculum, and those who question the role of sustainability and development in educational innovation in Galapagos. In addition, both the published documentation of the 2021 curriculum and the interview transcripts suggest validity of the critiques leveled against ESD in the Land Education literature.

This study dispels misperceptions held in the ESD literature and among conservation and education leaders in Galapagos by providing evidence that suggests that ESD and the many ESD-adjacent educational philosophies, are fundamentally incompatible with Indigenous education as articulated in the Land Education literature. Being embedded within a settler colonialist worldview, apparently benign ESD principles are recruited to serve ends consistent with the colonialist project. Further, this study reveals that ESD affirms current power structures by assuming colonial settler stability, thus dispelling the pro-change narrative promoted in the ESD literature and in the 2021 curriculum for Galapagos.

Limitations of this Study

The glaring limitation to this study is not interviewing Indigenous educational leaders in Galapagos or including their voice in this study. Galapagos has a bilingual, Indigenous-led school, so not including the voice of that community weakens this study. Indigenous people should guide educational reform in Galapagos to enhance its significance for the Indigenous community. The human relationships on Galapagos were formed within a colonizing mentality from the outset and this study intends to bring Indigenous voices to the forefront in order to reverse the colonization process.

A larger number of interviews with broader diversity of interviewees would have strengthened this study. The in-depth interviews of the key educational and conservation leaders in Galapagos provided rich data, but a larger and more diverse sample could enhance the data.

A third limitation is not addressing the Ministry of Education of Ecuador's specific school system for Indigenous people: Educación Intercultural Bilingüe (EIB), or Intercultural and Bilingual Education. Briefly, EIB has been instituted throughout Latin America since the 1970's. The curriculum and pedagogy aim to uphold languages, cultures, values, cosmovision (worldview), epistemologies, and histories of Indigenous people. People familiar with EIB in Ecuador, and in Galapagos, may ask why there is a need to reform the national and Galapagos specific curricula from an Indigenous perspective as this study proposes, in light of the existence of EIB?

First, Román et al. (2022) propose that weaknesses in the EIB limit its impact:

Focusing on EIB programmes in Latin America, López (2020) calls for transformative interculturalism to build and strengthen the collective agency of Indigenous communities and return the power and control of education to Indigenous peoples.

This transformative approach to interculturalism emerges in opposition to a functional

interculturalism, which professes dialogue while maintaining the status quo and favouring dominant White and Mestizo sectors of society without addressing colonialities, inequalities, or hegemony. (López 2020; Walsh 2010) (p. 5)

Second, Román et al. (2022) propose that the model of offering Indigenous-fused education almost exclusively to Indigenous people is flawed because all people should receive Indigenous education, the marginalized and dominant groups.

As López (2020) notes: 'Indigenous sectors, and not the mainstream, are identified as the target group of interculturalism, when it should be exactly the opposite' (8).

This concern echoes arguments for intercultural bilingual education for all (Hornberger 2000), as well as that of raciolinguistic approaches, which aim to take the attention off of the presumed-deviant racialised speaker, and place it on the marginalising processes enacted by the hegemonic perceiver (Flores and Rosa 2015). Román et al., 2022, p. 5

Another possible critique is that this study focuses on providing evidence of the problem, and offers no solutions, no way forward. It is the hope of the author that identifying elements of the problem with education in Galapagos in light of the 2021 curriculum could be considered an accomplishment given the deceitfulness and the violence inflicted through the negation of Indigenous epistemology, ontology, axiology, and history in the name of sustainability. It is also evident that Land Education can offer elements of a way forward for education in Galapagos. Broader proposals for the future of education in Galapagos will surely be forthcoming.

Future Directions

Future research should conduct similar studies on other islands that have implemented ESD-inspired educational programs in the form of curricula, professional

development, or other avenues. The 2021 curriculum for Galapagos may be an outlier in relation to other initiatives on islands, so having a broader database of ESD-inspired educational programs on islands would provide greater strength to this study.

Further research should explore teacher experiences in contextualizing the curriculum since 2016. The purpose of such a research project could be to identify the factors or elements that have contributed to or inhibited successful teachers from implementing contextualized instruction. A possible research question could be: what elements or factors have facilitated and impeded successful teacher efforts to contextualize their instruction? Clearly identifying such key factors should be helpful for teachers who want to improve their instruction. The methodological design could give importance to the voice, the experiences, and attitudes of the teacher leaders who have had success contextualizing their instruction. Teacher leaders in Galapagos have experienced the same challenges as all local teachers and have found ways to incorporate evidence based, student-centered instructional practices as a foundation to contextualize their instruction. Galapagos Conservancy has identified approximately 40 teacher leaders from core subject areas, all grade levels in most schools on three islands (Santa Cruz, Isabella, and San Cristóbal). These teachers excel at implementing sound, active learning instruction in their classrooms, show leadership qualities and are recommended by their school administrators. These teacher leaders have usually also had success contextualizing their instruction.

Another fertile area for research in Galapagos that would complement this study is non-formal education. Non-formal education is a prominent part of education in Galapagos. What are the “underlying conceptual principles, philosophies, and ontologies” of Galapagos? (Styres, 2018, p. 27). This is the question both science research and education need to set at their hearts. Non-formal education on Galapagos is uniquely positioned to lead educational efforts to answer this question and build identity on Galapagos.

Governmental (The Galapagos National Park) and non-governmental organizations offer non-formal educational programs in Galapagos mostly for youth volunteers outside of school hours. Such initiatives are generally high quality, well-funded opportunities for experiential learning through which participants gain an appreciation for the beauty, the biology, and the fragility of the Galapagos Islands, and to take responsibility for conserving such a treasure. Liberated from curricular, age-group, assessment, and administrative restrictions experienced by schools, non-formal education is better equipped to explore alternative epistemological, ontological, axiological, and history frameworks and therefore to critically respond to participant and community needs simultaneously.

The Galapagos Islands present an excellent opportunity to connect science education to formal and non-formal education in meaningful ways. Few places in the world can rival the abundance of professional scientific research taking place in physical proximity to students, educators, governmental and non-governmental organizations and the scientists themselves.

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Appendix A: Interview Protocol

Demographics: (for internal use only, all demographic data will be scrubbed from the report)

- Full name
- Name of Institution
- Position

Interview questions for conservation organization administrators:

1. How did you become involved in education on Galapagos?
2. What is your vision for education in Galapagos?
3. Explain the choice to use Education for Sustainable Development (ESD) (or Education for Sustainability) as the framework for the 2021 contextualized curriculum innovation.
4. How does using ESD fulfill your vision for education on Galapagos?
5. Are there aspects of your vision for education in Galapagos that ESD does not fulfill?
6. Were other educational frameworks considered when conceiving the 2021 contextualized curriculum innovation for Galapagos? Did you or others involved in the process consider using Buen Vivir as a broad development concept to frame the 2021 contextualized curriculum innovation?
7. What was your role, personally and within your organization, in the 2021 contextualized curriculum innovation for Galapagos?
8. How well does the 2021 contextualized curriculum innovation for Galapagos fulfill your vision for education on Galapagos?
9. If you were to give advice to people from other islands that share characteristics with Galapagos who want to make improvements to their formal educational curriculum, what would you suggest? (process and product)